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A Quarter-Century with the Junior College

By LEONARD V. KOOS

An Account of the Phenomenal Spread of this Recent Academic Development

THE beginnings of the junior-college movement reach far back into the nineteenth century, but just how far back the beginning belongs, as indicated by date of establishing the first institution, is still a matter of controversy. One claim, for instance, is placed at 1839 and another at 1869, although I am a bit doubtful that the claims are justified by any demonstrably direct connection with the junior-college movement. The first junior college with this relationship, Lewis Institute in Chicago, now a four-year degree-granting institution, was established in 1896.

It has been shown, however, that the idea of the junior college, expressed in print, emerged at about the middle of the century, while it has been established that the forces that have been making a place for the junior college in our system of education began to be operative more than a hundred years ago. Acquaintance with the fact that there were these earlier beginnings helps one to understand the astounding growth of the movement in the last quarter-century. With its roots lying so deep, the growth could hardly fail to be vigorous.

At the beginning of this quarter-century there were probably few more than fifty junior colleges in existence. With the sources of information at hand, it is impossible to indicate the exact number. We do know from evidence reported concerning the junior colleges in 1922 that 42 of them were in operation by 1912; this does not account for several in operation in 1912 that were discontinued before 1922. Not far from four-fifths of all the junior colleges in 1912 were private institutions; the small remainder

were, of course, under municipal and state auspices. The junior colleges in existence in 1912 were distributed in eighteen widely scattered states.

From the recent compilation by Doak S. Campbell, based upon the annual directory of the American Association of Junior Colleges, it appears that by the opening of the current academic year the total number of junior colleges exceeded five hundred—fully ten times the number in 1912. These junior colleges are distributed in forty-four states and the District of Columbia. The four states without junior colleges are the smallest in area or in population. The total does not include the junior-college or lower divisions of universities and colleges, which are properly a phase of the movement, the significance of which I shall touch on shortly.

Although in 1912 the private junior colleges far outnumbered the other types, and although they still outnumber the others, the disparity in proportions is not now as great as formerly, because of the rapid rate of increase in local public units. Junior colleges of the state type have experienced the least growth in numbers.

One way of obtaining an appreciation of the rapidity of growth of the junior college is to compare it with the growth of colleges and universities in this country. The celebration recently of the tercentenary of the establishment of Harvard, the first college on our continent, directs attention to the three-hundred-year span of the history of these institutions. The four-year colleges and the universities of the country now total roughly a thousand. Within the span of little more than a third of a century this novel type of unit in the American educational system has risen to half the total number of colleges and universities, which have a history almost ten times as long. A growth as rapid as this must be impelled by potent and basic forces. Most of this astounding spread has taken place, of course, during the last quarter-century. Indicative of the vitality and significance of the movement is the fact that the junior college continued its rapid growth in numbers and in enrollment even during the period of the economic recession, when several other types of institutions were losing ground.

THE growth of the junior college, however, has been much more than an increase in the number of institutions. It has grown in importance in the minds of both educator and layman. Such an effect would naturally accompany numerical and geographic spread. One evidence of this extension of the junior-college idea is increased recognition of it in professional literature and in the periodicals and books for the general reader. Substantial proof of the expanding discussion in publications of the junior college is afforded in a comprehensive bibliography on the institution prepared by Mr. Eells, of Stanford University, and published as a bulletin in 1930 by the Federal Office of Education. The bibliography of published materials contains sixteen hundred items. Most significant for a summary of junior-college development during the quarter-century is the increase in the number of titles published each year beginning in

1912. During each of the years 1912 and 1913, six titles appeared; for 1928 and 1929, the numbers were 319 and 314, respectively. Mr. Eells has continued in the *Junior College Journal* the compilation of the bibliography by listing and annotating titles on the junior college which have appeared since publication of the bulletin. The titles now number well over three thousand, indicating no cessation of published discussion of the subject.

TWO further instances are indicative of the growth in recognition of the importance of the junior college. One of these arose during informal discussion of the junior college with an officer in one of our larger state universities. This officer stated that during one recent year the number of students admitted with advanced standing (by transfer from other institutions) to the university was about fourteen hundred, and that approximately half this number transferred from junior colleges. Such a number and proportion would be certain to arouse the administrative staff and faculty of that university to the importance of the junior college in a way that was impossible twenty-five years ago. The other instance is the recent decision of an important educational foundation, the Carnegie Corporation, to make allotments of funds for the purchase of books for junior-college libraries. A total of three hundred thousand dollars has been set aside for the purpose. Many other evidences of the increased recognition of the junior colleges might be listed, if only time permitted.

It seems most desirable to review in this summary of junior-college development, progress in the clarification of the purposes of the junior college. Before undertaking this portion of the task, I should like to refer to the trend in the internal organization of universities and colleges represented in the emergence of the junior college or the lower divisions including the first two college years. This trend is itself a sort of admission, even if unintentional, of the significance of the junior-college movement. The first two of these horizontal separations were effected in the nineties, one of them at the University of Chicago, and the other at the University of California. This new feature of organization had no notable following for almost two decades, when, judging from its further introduction, interest in it increased. Examination in 1922 of catalogues of almost a hundred of the largest institutions of the country showed six of them with such divisions. A similar inquiry for the same group of institutions in 1931 found twenty-eight, or about 30 per cent, to have introduced the line of division between sophomore and junior years. In 1933, Kelly and Anderson reported that scrutiny of the catalogues of almost seven hundred higher institutions showed 20 per cent to outline "a more or less formal curriculum organization of this type."[1]

It would be surprising indeed if the trend toward junior-college divisions in the universities were not accompanied by a marked shift in the conception of purposes of education

[1]Kelly, Robert L., and Anderson, Ruth E. "The Extent of the Divisional Development of the Curriculum," *Bulletin of the Association of American Colleges*, XIX (December, 1933), p. 420.

at this level—or preceded by such a shift. The formulations of these purposes during the earlier years of the emergence of junior-college divisions were largely restricted to stressing preparation for advanced work and selection of students for the advanced level. Analysis of a dozen articles of recent publication dealing with purposes of these lower divisions of the university bear out the expectation of a marked shift. Preparation for advanced work was found still to be frequently put forward, but the most remarkable fact about the new formulations is the appearance of purposes seldom if ever mentioned in the earlier statements. Prominent among the additions are, first, provision of opportunities for exploration and orientation aiming to help the student to try himself out and to find himself; second, the fostering of a broad general education, in contrast with the emphasis on specialization; third, the "rounding out" of that general education; fourth, provision of programs suitable for students not continuing into the senior-college level; and fifth, close articulation with work taken by the student in the secondary school below.

PERSONS conversant with trends in the junior college proper will recognize that the same purposes have been coming into prominence both in discussion and in practice, although practice, as is often the case, lags behind theory. Provision for exploration and orientation is being made by the introduction to some extent of general, or survey, courses; and these same courses are designed to foster a broad general education. Provisions for students who cannot or should not continue to the senior-college level include opportunities for semiprofessional training; that is, special training for occupations which lie, judged from the standpoint of extent of preparation required, about midway between the skilled trades and clerical positions, which may be prepared for at the high-school level, and the professions, which call for four or more years of preparation beyond high school. Examination of junior-college offerings shows opportunities of this sort definitely on the increase. In the interests of "terminal" students also are the expanding offerings in music and the other arts, as well as other courses devised to enrich recreational life for those who enroll in them.

It has already been noted that one of the new purposes advocated for the junior-college division of the university is improved articulation with work previously taken in the secondary school. College and university authorities have too long disregarded and disparaged the work of the high school, and it is refreshing to observe a recognition of the need of regarding the work of the high-school and junior-college period as more nearly all of one piece. The junior colleges have distinct advantages over the universities or colleges in achieving this purpose of vertical articulation because most of them have been developed in close proximity to high-school years. Many local public junior colleges, in fact, three-fourths and more of them, are housed with high schools; and all, as indicated by their designation, are parts of local school systems. Large

numbers of private junior colleges also are maintained in conjunction with academies or high schools.

DESPITE their proximity to high schools, in the earlier stages of their development almost all junior colleges strove to accomplish as much separation from the lower unit as possible. This was to be expected in view of the tradition of separation established through the protracted struggle to divorce the four-year college from the academy, a struggle that was forced on the colleges by standards imposed on them during the nineties and the early years of the present century. In the light of the modern conceptions of the purpose of the junior-college period, some of the practices aimed at separating the junior college from the high school appear almost ludicrous. It is heartening to note that during the last ten or fifteen years a number of junior colleges, public and private, have undertaken to capitalize the advantage of their proximity to high schools. Many observers believe that this trend is one of the most significant in the development of the junior college.

Review of the efforts to achieve an improved articulation of junior-college with high-school work finds them to be rather diverse. In one place the experimentation takes the form of permitting selected high-school Seniors to attend freshman college courses, with the result that the high-school students are found on the average to do better, as measured by objective tests, than the college students, and just as well as or better than students pursuing the same courses in other colleges and universities. In another place, the experimentation involves the mapping out of a new curriculum aiming to permit accomplishment for the brighter students of the four years of work (the last two high-school and the first two college years) within a three-year period. In still another locality the plan has involved the careful study and classification of the entire school population from the first grade in the elementary school upward, with the aim of mapping out curriculums suited to different levels of ability and involving various lengths of stay to complete the whole program.

The most frequent type of modification, aimed to foster an improved articulation of high-school and junior-college periods, is one that involves the integration of the last two high-school years and the junior college into a single four-year unit. In the public-school systems this integration has been accompanied by the rearrangement of school units which is known by the name "the six-four-four plan," and involves the maintenance of six-year elementary schools, four-year junior high schools, and the four-year junior college already mentioned. This means of integration was first introduced about the middle of the quarter-century we have under consideration and has moved slowly for most of the period; but during the last few years it has experienced a spurt in interest and advocacy, as well as in number of commitments to the plan, that gives promise of rather rapid expansion during the next decade or so. The number of systems operating on the plan or committed to it is now nine or ten, which is rather large

considering the painful wrench of tradition and the rather basic changes in staff, plant, and policies, involved in the rearrangement. More systems are near the point of commitment.

THUS, even this brief and hurried review of the changes that have taken place in the junior-college movement during the quarter-century yields the impression of important and profound modifications. Through its rapid numerical growth and geographic spread, the junior college actually gives promise of displacing in time the first two years of work of the universities and colleges. This growth has brought with it a more general recognition of the significance of the movement in the minds of educator and layman, a recognition which is illustrated by the accelerated expansion of published discussion, by the increasing prominence of students from the junior college among the transfers to universities and colleges, and by the willingness of educational foundations to give substantial aid to the new institution. The development includes the supplementation and replacement of the traditional purposes of preparation for more advanced education and selection, which have been characteristic of the first two college years, by purposes more in keeping with a modern democratic society; it includes new elements of a program to implement these new purposes, among them an enriched and expanded general education and opportunities for occupational specialization for students who will not pass beyond the junior-college level. Finally, through efforts at improved articulation and integration of two levels of schooling, which naturally belong together but which, because of tradition, are now artificially separated, the junior college seems certain to move us toward a new pattern of organization of our educational system. The junior college is rapidly becoming much more than what many persons too often think of it, namely, just another place to get the first two years of a college education.

Education for Change

By STEWART G. COLE

Social Insecurity May Be an Incentive to Venturing

OURS is an age acutely insecure. Not only the structure of American institutions but the patterns of personal behavior are involved in sweeping change. Turbulent conditions in Russia, China, and Spain, and the discrediting of the League of Nations at Geneva are affecting in one way or another the vital course of human life on this side of the Atlantic. The situation facing persons within this country is also disturbing us. Within a single generation man has been compelled to accommodate his manner of living to the shifts from horse to motor transportation, cottage to apartment housing, patriarchalism to feminism, and from "standard" mores to the vogue of experimentalism. He has been invited to raise his sense of the meaning of time from the leisurely reckoning of life-spans to the disciplinary thinking of light-years. Within a decade he has been constrained to reorder his daily schedule to conform to the passing of an economy of plenty, abundance of work, and social *laissez faire*, and, on the other hand, to accept the dominion of hard times, enforced leisure, and widespread anxiety of the masses. These are symptoms of an agrarian culture that is waning and an urban civilization that is rising. George Soule informs us in his book, *The Coming American Revolution*, that, contrary to popular opinion, neither the reckless spilling of blood nor the violent overthrow of government is the *sine qua non* of a revolution. Rather, marked deviations in social attitudes, the functions of institutions, personal habits and status, life purposes, characterize a revolution. Mr. Soule believes he finds clear evidence of such conditions at the present time in this country. The Hoover Commission on Recent Social Trends presented abundant materials to support the claim. Charles A. Beard, reviewing the Committee's two-volume report, commented that "a revolution in thought is at hand, a revolution as significant as the Renaissance."

No human agency has retempered the habits of men as thoroughly as has modern science. On the one hand, technology has brought within the range of popular appeal multiple devices that call forth every conceivable form of life interest; and, on the other, the scientific world view has suggested an unfolding philosophy that staggers the imagination of awakened people. Joseph K. Hart has singled out the Model T Ford as the most influential mechanical force in the shaping of Americana. In less

than ten years twenty million of these motorized vehicles were distributed throughout the continent. Narrow dirt roads were transformed into arteries of transcontinental traffic; thereby the agriculturists discovered metropolitan centers and markets. Economic expansion was precipitated at an astonishing rate. Youth sensed a new freedom and availed itself of it. The self-sufficient neighborhood yielded its sovereignty in the face of the contagious lure for new experience. In this wake followed a breakdown of nineteenth-century customs, morals, and religious faith. The automobile has been instrumental in accentuating the rate of social shift from the moorings of our historic culture.

A demonstration dwelling opened by Westinghouse in Mansfield, Ohio, illustrates further the potentialities of this new age of power. The house contains an inclusive set of electrical appliances to serve the needs of the family. Three and a half miles of wiring and over two hundred outlets and connections were used in construction work. This made available one hundred and eight electrical horsepower of energy to do the work of eight hundred and sixty-four servants. Here is a house that automatically keeps itself. Eventually this type of dwelling will become the property of the people. We are told that amazing mechanical inventions lie idle in industrial warehouses today because, if put on the market, they would irritate still more grievously the unemployment problem and possibly cripple beyond repair the strained process of economic recovery. Inventive engineers are impatiently pressing an overtaxed society to absorb their products of hand and brain.

Equally significant in this scientific age is the challenge of man's traditional world view. Astrophysicists have shocked the complacency of every philosophic mind. Patterns of metaphysics of pre-Einstein blend cannot endure the weight of recently accumulated astronomical claims. The "relativity" theory of the universe is being subjected to severe criticism and, according to Harlowe Shapley, director of the Harvard Observatory, the time-space principle is being verified. Sir Arthur Eddington is pressing the claims of a deduction of this theory that deals with the speed of expansion of the universe. Perhaps the most useful laboratory star for this purpose is Nova Hercules; it exploded about the same time as the Roman Empire but delivered its catastrophic message to earth only twenty months ago. Tracing the progress of astronomy before the American Association of Variable Star Observers, Mr. Shapley, after cataloguing a long and impressive list of recent findings, concluded that "the number of mysteries uncovered again appears to be in excess of the mysteries solved." Who can think on these facts without subjecting his social and religious values to drastic accountancy?

Is science disposed to proclaim a moratorium in order that society may embrace the potential advantages of a technocracy? Disregardful of consequence to social behavior or human thought, cosmologists and technicians continue to interrogate reality, ply their crafts, and sharpen the tools of a

revolutionary age. There is only one direction in which men may go; that is, forward. They must learn, unlearn, and relearn times without number how to accommodate their behavior, wishes, norms of living, and world view to the surpassing values that are found to be inherent in the scientific approach to life.

THE purpose of American institutions, as well as the rôle of personality, is caught up in conditions of acute change. In the realm of government, are we not moving out of an era when principles of statecraft rested rather lightly upon the shoulders of legislators, into a day when socioeconomic planning on an increasingly comprehensive scale is imperative? What constitute the mutual responsibilities of capital, labor, and the public in the mass production of goods? How accommodate state and Federal "rights" when business interests take on transcontinental proportions? What adjustments of legislative, judicial, and administrative government are involved when new frontiers of human relations are being freely explored? What national functions shall a people choose in an age whose economic controls are basically international?

The political confusion centering in Washington during recent years dramatizes clearly the outcome of an anomalous situation deeply rooted in the structure of Federal government. Political scientists anticipated its coming. Because a farmer, manufacturer, churchman, or lawyer has won the confidence of his constituency and has been elected to Congress is no criterion that he is fitted to interpret the technical legislative problems of an industrialized, international era. If any president and his cabinet are to administer affairs of state advisedly under present-day conditions, they must depend increasingly upon the guidance of economic, sociological, and legal experts. In spite of the efforts of local dictators in certain states of the Union and their threat to normal political procedure, the American people have accepted as sound the general principle of political democracy. They have yet to consider seriously basic changes in state and Federal government that are essential to the establishment of economic democracy and the interrelation of the principles of political and economic democracy. Henry A. Wallace has reminded us repeatedly that this latter "desperate struggle" is upon us; escape from it we cannot. What were the Reconstruction Finance Corporation of the Hoover administration and the National Recovery Act of the Roosevelt administration but experiments to cope with the mandates of a revolutionary big-business age? How effective these instruments have been is not a subject to engage us on this occasion. That the agents of government must become increasingly critical, experimental, and reconstructive to meet shifting human needs is unquestionably true.

A similar situation presents itself in the field of industry. For a century, aggressive individuals have been building the framework of the business world. Behind expansive railroad, steel, motor, and oil industries have stood strong men of vision, tireless

promoters, and practical strategists. Their names are familiar to all of us. How the government conferred large grants of power on them, thus increasing their control of economic life, is well known also. The techniques of "rugged individualism" have remained undaunted until recent years. Now the advisability of perpetuating this tightening structure of big business is being widely questioned. The labor world is protesting; the Christian church calls for a better system; some industrialists are doubting the validity of the nineteenth-century plan; the public is asking for an appraisal of the scheme. The business depression with its harvest of wholesale unemployment, moral confusion, and burdens of public relief is pressing educators, churchmen, and public-spirited citizens to rethink the principles of social economics. Here and there business magnates are resorting to experimental procedures with reference to ownership and management of their industrial enterprises. The human interests of employer, employee, inventor, entrepreneur, and the public, and their interrelations are involved: in any satisfactory economy the just rights of all parties must be safeguarded. Industrially, American civilization is entering a new era.

There are indications of marked change in religious circles. The theological claims of traditional Christianity have been subject to critical study for two or three generations. As yet no clear pattern of Christian reference has been generally endorsed by the Church's scholars. Personalists, transcendentalists, relativists, humanists, and agnostics still divide the main issues between science and religion. On the other hand, denominational sectionalism is now endured rather than endorsed. There is a concerted move on the part of religious statesmen to transcend secondary differences in the church and to unite upon primary causes. The aggressive challenge of secular forces to the institutions of religion makes necessary further realignments of Protestant, Catholic, and Jewish agencies in order to preserve the most cherished ideals of organized faith. The currents of religion are running roughly in a deeply distraught world order.

DOES orderliness prevail in our institutions of learning? The socialized-personality principle in education is serving as a vigorous focusing point for the reappraisal of school administration, pedagogy, curriculum, vocation, and culture. The experimental method, on trial in business and government, is clearly evident in the classroom. The nursery school suggests that child education begins at two, and the adult-education movement assures us that the art of learning is never terminated. Whether school children should be introduced to pressure issues in the science of social relations and then left to fashion their own ideals about controverted questions, or whether they should be instructed in democractic and ethical values pertaining to these issues has divided the councils of the National Education Association. One vigorous group of school men claims that indoctrination in socialized principles of state and industry is not only justified but

essential in institutions of learning that would serve the interests of the people at large. On the other hand, some educators do not regard this area of human relations as a center of interest for the school man. The director of the American Association for Adult Education predicted a year ago that our teaching forces would soon vacate this controversial arena and "retire to their own realm of education." One is constrained to repeat the question that Raymond B. Fosdick raises in his book, *The Old Savage and the New Civilization*, "How well educated are our educators?" Shall education degenerate into instruction or dislodge fears, injustices, and insecurities from our highways of public life? Dewey has reminded us that,

> great as have been the changes in our educational system in the last hundred years, and especially in the last thirty, they are nevertheless slight in comparison with those which must be undertaken in the next generation. How can education stand still when society itself is rapidly changing under our very eyes? The sense of unsolved social problems is all about us. There are problems of crime, of regard for law, of capital, of labor, of unemployment, of international relations and co-operation—all on a larger scale than the world has ever seen before. Anticipation of continued and large-scale changes in education is, then, not so much a prophecy as it is a warning. Unless education prepares future citizens to deal effectively with these great questions our civilization may collapse. It cannot give this preparation unless it, itself, undergoes great transformations.

People who are caught up in a revolutionary age always set forth a wide variety of formularies to treat the troubled situation. Quite probably a majority of Americans want to check forthright the processes of abnormal change and to establish normalcy in terms of the old cultural moorings, but there is no turning back for our people. Neither the prescientific nor the predepression patterns of individual or corporate behavior can be recalled. We are moving forward along new and untried highways of living to frontiers of civilization hitherto unknown. This is the march of contemporary history. Fresh experiments of science, democracy, industry, religion, education, promise in due course a critically reconstructed world.

EVEN so, there are two reactionary movements trying to arrest social change. One promises remedial adjustment for the times by setting up a technique of force for culture control. Its sponsors believe that it is reckless to tolerate any further breakdown of historic authority in social institutions. Some parents are attempting to reinstate "the good old ways" in the family by insisting upon stricter standards for their children's conduct. Certain spokesmen for criminal law claim that the whipping post should be brought back to the public square. On slight provocation both capital and labor resort to strikes and lockouts in an effort to achieve class power in the industrial struggle. Efforts of this kind have become increasingly sharpened in recent years. Discussion of differences in sectional viewpoint, democratic conference, joint action—these are slow and painful methods of retrieving justice; force is so much more swift and effective in acquiring

what men want. The dictator mood in government is party to the same principle. Huey Long was a direct product and remains a political symbol of our times. Political "bosses," utility lobbyists, bonus exploiters, and professional racketeers—and what are these but pressure groups ambitious for power at the expense of public welfare? This policy marks the fatal weakness of communism as a philosophy of social behavior. John Dewey has pointed out that the communist, accepting in advance the inevitability of violence, "tends to produce the use of violence in cases where peaceful methods might otherwise prevail."

The same spurious method to establish social normalcy is being applied to educational institutions in America. Certain groups of disturbed citizens are attempting to destroy sound academic inquiry in the classroom and to substitute "idea" regimentation. An invidious fear that something immeasurably precious is being lost during our era of stress and strain moves these agitators to inflict "loyalty oaths" on school teachers and jail sentences upon children who refuse for conscience' sake to salute the flag. This threat to educational freedom is being resisted by many of America's finest citizens and scholars. To surrender to this type of pseudo patriotism would make of our schools and colleges the puppets of a totalitarian state and the foes of democratic idealism. What has happened in the world-renowned universities of Heidelberg, Munich, and Berlin will not come to pass in America's schools and colleges as long as sensible people believe in America.

The most strident agent of force to attempt the arrest of the conditions of social change is war propaganda. A militaristic mania invariably breeds when old cultures are disintegrating rapidly. Because problems pertaining to trade, colonization, monetary relations, and diplomacy are especially disturbing, a public opinion stirred up by national extremists presses for increased armaments to protect person and property. The Federal budget for military defense must be grossly enlarged; army, navy, and aerial maneuvers must be prosecuted on a heightened scale; and, it has been suggested, the erection of a major fortification on the Canadian frontier would be an advisable precautionary measure for our time. The nationalistic phobias that shock disruptive Europe are rooted in confused America.

THE other technique that alarmists are using in an effort to check conditions of acute change is the appeal to history for dogma to solve contemporary problems. If institutions of government, industry, religion, and education only returned to the faith of the fathers, the old securities and contentments of life would be re-established. This gospel is preached regularly in political camps. "Jeffersonian democracy" or the literal teachings of Lincoln are the way out, we are told. Much is heard about the sufficiency of the Constitution. Can a national document drawn up by statesmen in the eighteenth century, however priceless their contribution to political democracy, anticipate the emergent issues of a civilization arising in our twentieth-century situation?

To answer this question in the affirmative is to support a logic of political absolutism. The claim would be akin to that of Hegelianism in philosophy. However, the alternative to social submission to the Constitution as such is not to regard it as a scrap of paper. Shall a people seeking to straighten out political, economic, and international entanglements in a revolutionary period remain free to discuss on their merits every phase of constitutional questions, and in the light of the most desirable procedures, accommodate the letter of historic documents to the needs of the new age? In the light of recent Supreme Court decisions it is rather clear that there are issues for which we do not have adequate constitutional instruments. This is true with reference to economic planning on a national scale, the interrelation of state and Federal prerogatives, and a workable policy covering domestic and foreign-trade relations, to mention only three issues of acute tension in our public life.

The same short-cut pattern of thinking is voiced by certain industrial spokesmen with reference to the economic hazards of our time. The great deliveries of Jefferson, Hamilton, and Adam Smith are quoted to represent business orthodoxy. To regard seriously the claims of contemporary economists is to invest faith in a false messiah. What men on Main Street must do is to return to a purer form of *laissez faire* such as obtained in the early stages of industrial development. Those who rise in America's economic empire do so by practicing the virtues of personal prowess—thrift, initiative, hard work; these well-disciplined men are the moral as well as the business backbone of the country. Americans should have full confidence in such rugged leadership rather than tolerate any tinkering with our industrial system. In the old order security prevailed—in an experimental régime exaggerated change and change within change threaten peace of mind and orderliness in economic recovery; this is the logic of those who support a pioneering industrial order that is giving way to a more mature and co-operative form of democratic society. Precisely the same viewpoint is advanced by those who support the historic craft-union movement of the American Federation of Labor in opposition to the industrial-union movement.

A similar psychological phenomenon is witnessed in Christianity. Not a few well-meaning churchmen seek to check persistent processes of religious changes by recourse to one or another age-respected tradition of the church. They regard spokesmen for moral and spiritual excellencies who neglect the old formularies as "naturalistic" believers, hostile to the faith of the fathers. Are not Barthianism and Buchmanism two subtle forms of this state of mind? The first movement seeks to escape the relativistic logic of history by taking refuge in a religious frame of reference that transcends history. The second waives lightly the arduous services of modern scholarship and the plain teaching of psychology concerning the social nature of man's inner experience, maintaining that any person who intently "listens" may be guided infallibly amid the exasperating vicissitudes that upset

our age. One movement rests upon a dialectical dualism with reference to the riddle of existence, and the other settles down to a naïve dependence upon animistic phenomena. Both exponents of traditional stands of Christianity fail to recognize that the doctrinal views and the churchly forms they seek to perpetuate are themselves historically conditioned phenomena, and consequently subject to social change in the forward thrust of human society. Jesus of Nazareth had no scruples about breaking with manners, morals, and religion which he regarded as inconsistent with a more spiritual conception of reality.

AN OBVIOUS trait of these times is sweeping social change. That neither a technique of authoritarianism nor a return to traditional doctrine offers us a satisfactory way out of our communal insecurities is convincing. Those who put their trust in the former method fail to recognize that force always begets counterforce, introducing a more mischievous state of change than that originally in effect. This is the fallacy of communism, as also of the Versailles Treaty. There remains a more happy and effective approach to the ills of society than any manner of *coup de force*. Those who depend upon a doctrinaire policy of social reconstruction are misled when they assume that the issues of change can be met by a philosophy of fixities, or that relative problems can be solved by resort to absolute formulas. An Aristotelian method of thinking is scarcely to be trusted in an Einsteinian era. Said an ancient sage: "Men do not put new wines into old bottles, else the bottles break and the wine runneth out and the bottles perish; but they put new wine into new bottles, and both are preserved."

A. A. Whitehead has voiced this same principle in terms of our social milieu when he says:

> Our sociological theories, our political philosophy, our practical maxims of business and our doctrines of education are derived from an unbroken tradition of great thinkers and of practical examples, from the age of Plato in the fifth century before Christ to the end of the last century. The whole of this tradition is warped by the vicious assumption that each generation will transmit those conditions to mold with equal force the lives of its children. We are living in the first period of human history for which this assumption is false.

It is not the fact of change that makes our generation's problems more stubborn than those of former generations. The processes of social evolution are ever operative. Rather, the universal reach of social forces precipitating change and the accelerated rate of cultural change constitute our dual dangers. Whether we Americans can experiment intelligently with available resources in a turbulent age, assimilate into our social perspective the fusion of old and new values essential to wholesome behavior, and rebuild basic rubrics of our civilization while we live within it, remains to be seen. If we succeed, it will be because we have learned the discipline of a philosophy of change. Are there not three basic axioms involved in such a point of view?

In the first place, man must learn to live happily in terms of an inclusive

environment that is subject to subtle changes. Personalities that cannot become "at home" amid revolutionary movements in behavior, thought, and ideals, suffer psychopathic outcomes. It is hygienically possible for an individual to recognize at face value sweeping shifts in a culture, to understand why these events pertain, and indeed to enjoy the turn of the times. Pioneering peoples could live thus without great difficulty in terms of several areas of social reconstruction so long as it was possible to retreat to a steadfast family and an unshaken religious faith. But all foundations, including those of family and church, are challenged; every human institution is involved in the stress and strain of revision of values.

EVEN so, change is understandable. It is subject to law, the basic law of social adjustment to environment. An individual or a society suffers from a state of change only when maladjustment ensues. Change is the harbinger of progress for such as maintain perspective in the process. Happy is the man in family, government, business, and religion who is learning to practice equanimity of mind and to enlist social understanding amid the confusions that disturb the foundations of our civilization. Such associated individuals rebuild human society. Does not this fact suggest the primary function of an institution of learning and the first principle in a sound philosophy of education? When education loses itself in the well-being of a people hard pressed by a formidable world, it will rediscover its democratic sanctions. Not fevered action nor pious indoctrination marks its prophetic course, but rather deliberate and high-minded human direction amid the turbulent streams of life. Economic and spiritual security will be re-established as the American people subject themselves confidently to the law of social change.

The second factor in such a philosophy requires that society adopt the experimental method to meet the problems that hold it in their grip. There are no pre-established blue-prints of procedure by which parents, industrialists, or statesmen can shape their particular rôles advisedly in this kind of world; nor are there clearly articulated standards of the good life by which to guide school and church in problematical situations. Who knows "the way" with reference to prohibition, child nurture, economic justice, or international peace? The most dependable voices emanate from those sources where courageous trial of ideals is going forward. What was the eighteenth amendment of our Constitution but a social experiment in temperance? It did not work satisfactorily; better temperance measures will emerge as Americans continue to enlist the experimental method. What is the League of Nations but an amazing international project in face-to-face world diplomacy? It has not yet proved adequate for the political needs of the world. Nothing being sacrosanct about the Wilson formulary, the League will alter its policies and improve its functions with further trial. President Hutchins of Chicago tells us that "facing some of the most difficult problems our country has

ever seen . . . we must realize that the way to deal with them is through more deliberation, more discussion, more democracy."

Experimentalism is not a do-as-you-please way of living, except in vulgar circles. On the contrary, it suggests a disciplinary and straightforward critique of behavior, personal and corporate. It enlists the method of intelligence. Instruments of the good life issue prophetically through social conference and are tempered as social engineers test them patiently in terms of the tangled problems of the day, the generation, the age. We are learning something about the good life in this period of cataclysmic change. We are morally wiser, if not financially wealthier, by reason of the recent economic debacle. We are sobered, if not secure, by a decade and a half of international conferences concerning monetary questions, world trade, armaments, and peace. We are heartened, if not redeemed, by an associated Protestant-Catholic-Jewish concern for the cause of conscience in the contemporary state. A superior social order emerges as pioneering agents attempt high ventures and acquire spiritual direction on behalf of their troubled fellowmen. The college of liberal arts and science comes abreast of its responsibility in so far as it aspires to this type of leadership in meeting the needs of the world.

The third principle by which men may learn to live rewardingly in our age is to exercise increasing faith in relative ideals of the good life. Emphasis rests upon the word "relative." The wise person puts his trust in such claims as critical experience assures him are fit and happy. Standards of action are flexible in any case, depending for their degree of soundness upon the thoroughness with which they have been tested and the range of situations in life on which they have a reasonable bearing.

This is as far as the experimentalist may go with reference to principles of action. The viewpoint is unquestioned in the fields of physics, medicine, and engineering; for many, it is still considered hostile to well-being in the areas of social relations, education, and religion. On the one hand, they cast discredit upon a democracy of industry, society, and church to which genuine liberalism is leading us; and on the other, they seek a safe retreat in some abridged social or ethical orthodoxy. Despite this counter trend, free educators, at home in a world of subtle change, find the meaning and purposes of life within the conditions of change, and move confidently forward to support these values as the means of spiritual health. Seventeenth-century English colonists adopted this frontier viewpoint in the new world; founders of the American democracy were inspired likewise in the last century; men who would re-establish order and harmony in our contemporary scene cannot live otherwise. What is proved good by the acid test of democratic trial is held fast. When a practice, law, or value fails to represent adequate responsibility for a people subject to revolutionary change, it is discarded in favor of more timely idealism. In such a progressive spirit, educators may enlist themselves, and to such an appointed task the liberal college may rise.

It may be claimed that danger and insecurity are inherent in this philosophy of change. That is true. Who seeks static security in an adventurous age when great areas of the world, cosmic and human, are being repeatedly reborn? Only when insecurity leads to drift, or doubt to despair, does a people suffer cultural relapse. For normal persons, social insecurity provides the incentive to action, democratic procedure furnishes the direction in which the most rewarding ventures may be made, and relative values guarantee that the good life may be established.

General Education Changes the College

By B. LAMAR JOHNSON

Changes Its Philosophy, Its Curriculum, and Its Administration

ESSENTIAL to a discussion of college changes resulting from the general-education movement is an understanding of the term *general education*. Keppel gives his concept when he says that general education "concerns itself . . . with the fuller understanding of the laws of learning and their application at different levels and for different purposes, and with the broad provisions which society is making for the adjustment of the individual to his environment."[1]

Hutchins asserts, "The scheme that I advance is based on the notion that general education is education for everybody, whether he goes on to the university or not."[2] He further states, " . . . any plan of general education must be such as to educate the student for intelligent action. It must, therefore, start him on the road toward practical wisdom."[3]

MacLean writes,

> Our concept of general education is, then, one of a training process designed to make young people at home in their complex modern world rather than to give them an analytical, minute and complete picture of the intricacies of one phase of it; to give them the chance to make themselves supple and adaptable to change rather than rigidly prepared for a single vocation; to enlarge their vision to see the wholeness of human life instead of leading them deep into microscopy; and to let them acquire a sense of values in the many phases of adult living outside the strictly vocational.[4]

Keppel, Hutchins, and MacLean agree that general education aims to adjust the individual to the world in which he lives, emphasizing particularly his training, not as a specialist, which would be professional education, but as a layman. General education thus described cannot be confined to any single level of our school organization; nor, in fact, can it be limited to the school. The one essential in general education is the adjustment of the individual to his environment. Education leading to this goal may take place in the elementary school, or on the playground; in the college, or at the *CCC* camp; in

[1]Keppel, F. P. *Report of the President of the Carnegie Corporation of New York for the Year Ended September 30, 1934.* New York: Carnegie Corporation of New York, 1934. p. 33.

[2]Hutchins, R. M. *The Higher Learning in America.* New Haven, Connecticut: Yale University Press, 1936. p. 62.

[3]*Ibid.*, p. 67.

[4]MacLean, Malcolm S. "The General College: The University of Minnesota," *General Education: Its Nature, Scope, and Essential Elements.* Chicago: University of Chicago Press, 1934. p. 120.

the adult-education class, or in the factory. Considering general education thus would make our subject too extensive for this presentation. For this reason, and also because of the interests of the writer, this paper is limited to the field of higher education.

Without doubt many students have attained the objectives of general education in the so-called "traditional college." This discussion is particularly concerned, however, with those programs of higher education which have been reorganized for the purpose of aiding a larger proportion of students to attain the objectives of general education.

TWO types of adjustment characterize the new programs of colleges committed to general education. These are: first, the curriculum adjustment and second, the guidance adjustment.

The most obvious change for an institution newly interested in general education is to modify its curriculum. We may distinguish between two approaches to such modification: first, the leavening approach; and second, the new-recipe approach.

By a leavening approach I refer to a partial reorganization which ultimately purposes to permeate the entire curriculum. The leavening approach may appear at its beginning to be an inconsequential innovation. Some years ago a professor of political science at the University of Iowa began looking for a classroom which could be fashioned into a new-type place of meeting for a new course. He found the room, and he arranged a combined library-lecture room which he outfitted with two hundred comfortable chairs, a phonograph, reading lamps, attractive drapes, and appropriate art objects, not to mention several thousand books. Using this room as his center, Benjamin Shambaugh began offering in the political-science department a course designed to introduce the students not merely to the social studies, but also to some of the wonders and mysteries of science and art, of philosophy and religion. Today Mr. Shambaugh's course, Liberal Approaches to a Cultural Education, has outgrown all departmental boundaries. I mention this course not because it is popular, not because it is possible to enroll in it only a fraction of the students who feel a need for it, but rather I refer to it because I am told it is acting as a leaven; it is influencing the content and organization of other courses at the University of Iowa.

Comparatively few colleges have individual professors who, single-handed, exert influence sufficient to act as a general-education leaven. Accordingly, a usual plan is for the college administration to introduce one or more new-type courses which it hopes will act as a curriculum leaven.

Another type of leaven is used by institutions which establish a completely reorganized curriculum to be used experimentally with only a fraction of its students. This plan is used at the State Teachers College, Mount Pleasant, Michigan, where the decision was made to experiment with a reorganized program designed to aid the student in adjusting to his environment. The college administrative

officers secured the counsel and continued guidance of a group of eminent educators. Following months of careful planning, determining objectives, and devising new procedures, the reorganized curriculum was introduced—with enrollment in it limited, however, to a fraction of the student body.[5] It is expected that this new program will act as a leaven and that eventually the new curriculum will be offered to all students.

Most colleges interested in general education use the leavening approach. Since this plan permits gradual change, it is not attended by the dangers inherent in radical immediate changes. A number of institutions are not content, however, with placing a bit of yeast in the college curriculum—they demand an entirely new recipe. Representative of programs which I should group in the new-recipe adjustment are those at the University of Chicago, at the General College of the University of Florida, the General College of the University of Minnesota, and Stephens College. For illustrative purposes I shall refer to the planning of the curriculum at Stephens College.

IN 1921, W. W. Charters and the Stephens faculty began working on the development of a curriculum for college women. "If we are to build a curriculum for women," said Mr. Charters, "we must know what women do. Immediately then we must raise the question: In what women are we interested? The answer is: We are interested in college graduates, for that is the group which we shall be training."

Accordingly, Mr. Charters secured the co-operation of more than three hundred women in thirty-seven states, one-half of whom were married and one-half unmarried. These women, all of whom were college graduates, kept, over a period of weeks, diaries in which they recorded not only what they did but their thoughts and their problems. These diaries were summarized, and it was found that there were some seventy-five hundred different items, which were later classified into 24 groups or major headings. The next question raised by Mr. Charters was: What groups of activities should be the basis for the core curriculum with which we shall expect all students to have contact? "The answer to this question," he said, "will depend upon the answer to the following: What activities are engaged in by all women regardless of whether they are married or single, whether they are employed outside the home or are in the home?" Analysis of the varied groups of activities revealed that the following seven areas were common to all women: communication—both oral and written, aesthetics—appreciation of the beautiful, physical health, mental health, consumers' problems, social relations, and philosophy of living.[6]

The results of Mr. Charters' investigation have been used in building the Stephens College curriculum. When I use the term *curriculum* in this connection, I am referring not only

[5] Heaton, Kenneth L., and Koopman, G. Robert. *A College Curriculum Based on Functional Needs of Students.* Chicago: University of Chicago Press, 1936. pp. 66–87.

[6] Charters, W. W. *The Stephens College Program for the Education of Women.* Columbia, Missouri: Stephens College, 1935, pp. 14–16. (Stephens College Bulletin, XVI, Educational Service Series, No. 1).

to the course of study, but I am including the entire area of student experience—in the classroom, in the laboratory, in the studio, in the library, in the residence halls, in clubs, in student government, on the athletic field, and in the entire community.

OUR discussion of approaches to the problem of curriculum adjustment has suggested types of modification which have taken place. I shall, however, be more specific. The most apparent curriculum change has been establishing courses which relate obviously to contemporary living. Representative of this trend, we find Minnesota's Art Today, Georgia's Contemporary Georgia, Allegheny's Foundations of Modern Science, Florida's Reading for Pleasure, Stephens' Consumers' Problems, and Bucknell's Modern Social Institutions. Some of these courses are built on the assumption that art can be taught by studying the design of salad plates, ink bottles, and of doorknobs, as well as by studying Michelangelo, Rembrandt, and Matisse. Some of these courses are taught with a conviction that in general education the student's reading habits are more important than an analysis of the plots of Shakespeare's tragedies; that graft in 1936 elections is as significant as democracy in ancient Greece; that the cause and cure of colds is as important as the reproductive organs of the earthworm. The assumption underlying these new courses is that a study of contemporary situations better prepares the student for life, and that, properly taught, it is likewise as scholarly as traditional study based entirely upon problems and materials remote from life.

Colleges with reorganized programs of general education are breaking down artificial departmental boundaries. It is not uncommon to find colleges where twenty-five departments have been consolidated into three or four curriculum divisions. Along with the divisions, organization has developed the survey course. Representative of survey courses are Akron's Introduction to the Social Studies, Idaho's Correlated Science, Pasadena Junior College's Survey of Humanities, and Fenn College's Blended Curriculum. Many survey courses illustrate both curriculum changes which I have mentioned: for example, the Blended Curriculum at Fenn College is based upon a study of contemporary life in Cleveland, and it also breaks down departmental barriers by cutting across the fields of government, economics, and sociology; of art, literature, and music.

I have mentioned two types of curriculum change in general education: in the first, course content is more closely related to life; and in the second, artificial departmental barriers are broken and the unity of knowledge is established. In relation to the curriculum adjustment, I am tempted to comment on a number of related problems—those of class-size, of individualized instruction, of securing competent instructors, of the more extensive use of the library; I shall content myself, however, with merely mentioning these and turn to the second adjustment—the guidance adjustment. Uniformly, colleges committed to general education stress guidance.

This is reasonable, for, if general education aims to help the individual adjust to life, it is essential to recognize that this adjustment is an individual matter—dependent upon individual abilities, interests, and needs. Upon these bases the college assists the student to determine his individual objectives and mold a program to attain them.

The guidance program assumes that the individual student is the unit, the unifying center of the total educational program. Instead of thinking in terms of courses, of credits, of school objectives or of course objectives, guidance requires that every activity, class or extra-class, be considered in the light of its effect upon the individual student.

Organization for guidance differs materially in various institutions: in some institutions, as at Pasadena Junior College, guidance responsibility is centered primarily in special personnel workers who devote their entire time to guidance. In other colleges, each faculty member is an adviser to a group of students. The important factor here is not the relative advantages of the varied types of guidance organization, for one type fits the needs of one school and another type fits those of a second institution. Rather, the important fact for us is that the guidance adjustment is recognized; it focuses attention upon the individual student; it is proving vital to general education.

THE general-education movement is indeed changing the college—its philosophy, its curriculum, and its administration. To the writer, those changes, by and large, appear to be in the right direction. General education must soon submit, however, to an evaluation in terms of the lives lived by its students. Such an evaluation will be a stupendous task, but it must be made. We must know the effect of general education upon the leisure of men and women—their reading habits, their radio-listening habits, their hobbies; we must know the effect of general education upon vocational success, upon professional standing, upon habits of work; we must know the effect of general education upon health habits, upon family adjustment, upon social attitudes, upon a philosophy of life.

The Master's Degree

By PHILIP L. HARRIMAN

A Historical Interpretation of Status and Definition

ON THE part of college graduates there is an increasing interest in obtaining the Master's degree, *secundum gradum in artibus*, and, on the part of college faculties, a concern to determine the significance of the degree and to set appropriate standards for it. The marked increase in the number of candidates for the degree is shown by the fact that, in 1900, American higher educational institutions granted 1,744 Masters' degrees and in 1932, 19,339 were awarded.[1] A great number of the candidates for this degree are either prospective secondary teachers or secondary teachers-in-service. Three reasons stand out among those which have brought about this remarkable contemporary increase in the number of candidates for the degree. First, a few states now require the degree for all secondary-school teachers, and in other states the teachers believe that shortly it will be a general requirement. Indeed, one of the basic issues discussed at the 1937 Institute for Administrative Officers of Higher Institutions was whether a Master's degree should be prescribed for secondary-school teaching. Second, administrative officers held responsible for building up enrollments in summer schools and extension departments have urged upon teachers-in-service the need for starting a program leading to the degree. The tendency to accept extension and correspondence courses in partial fulfillment of the requirements is said to be on the increase.[2] One critic points out that the degree may be earned in four six-weeks summer terms spent in classes ranging in size from two hundred to five hundred students.[3] Third, the increased financial rewards and the improved professional status of secondary-school teachers have stimulated the more ambitious to seek better training for their work by taking advanced degrees.

Consequently, many higher educational institutions offering courses leading to the Master's degree now appeal particularly to teachers-in-service and to prospective secondary-school teachers to undertake these programs. Curriculums leading to the degree in fields other than teach-

[1]John, Walton C. "Graduate Study in the United States," *School Life*, XXI (September, 1935), p. 20.

[2]Deferrari, R. J., "Rehabilitating the Master's Degree," *The Commonweal*, XVI (June 29, 1932), pp. 233–35.

[3]Schlicter, C. S., "'Debunking' the Master's Degree," *North Central Association Quarterly*, III (March, 1929), pp. 463–67.

ing are also being offered to graduates who might profit by a further year of training in a specific field or in general culture. Two motives seem to be operative here. First, department chairmen anxious to build up their fields seek to retain a few outstanding Seniors for an additional year and, to compete with the larger universities, hold out the lure of the Master's degree. Certain of the great universities which formerly did not recognize a Master's degree conferred by a small college now accept it at full value in the doctorate program. Second, college administrators like to have a few graduate students on the campus to set the pace in academic excellence and to serve somewhat the same purpose for class work that a nucleus of subsidized athletes does in intercollegiate competition. Principally, however, the degree is planned for, and taken by, teachers-in-service and prospective teachers. Woodbridge states that the degree is sought to give its possessor a better social status, but that the general public holds the Master's degree, and all other academic honors, in little awe.[4] Lowell regarded the contemporary Master's degree as of the same status as the old Bachelor of Arts' degree.[5] At any rate, the numbers of candidates are increasing, and the institutions which confer the degree are multiplying as smaller colleges add Masters' degrees to their baccalaureates.

Current articles which deal with the degree may be classified under either of two headings. First, there are reports of contemporary practices in granting the degree and of changing requirements in various institutions. For example, over a decade ago, announcements were made regarding a two-year program leading to the Master's degree in the English department of the University of North Carolina, and in 1929 the Graduate School of Education at Harvard gave notice of a plan, since abandoned, to establish a two-year program. More recently the University of Pittsburgh has announced a program leading to the degree of Master in Letters.[6] All the various requirements and programs have been conveniently summarized in a government bulletin,[7] and the current actual practices are most lucidly set forth in various summer-school catalogues. Second, an increasing number of articles and reports deal with the need for better standards and a greater uniformity of requirements for the Master's degree. The report of the American Association of Universities Committee on Masters' Degrees, for example, evaluates the significance of the degree and recommends new standards.[8] These normative reports all agree that the degree should not be awarded *honoris causa*, but that it should represent the equivalent of at least one year of postbaccalaureate study. Among the 1937 announcements of honorary

[4] "Higher Degrees in American Universities," *School and Society*, XXIII (January, 1926), pp. 18–19.

[5] Heller, O. "The Teaching Degree," *School and Society*, XXXV (January 30, 1932), pp. 135–40.

[6] "The Degree of Master in Letters at the Graduate School of the University of Pittsburgh," *School and Society*, XLIII (February 1, 1936), p. 145.

[7] John, Walton C. *Graduate Study in Universities and Co leges in the United States*. Washington, D. C.: Government Printing Office, 1935. pp. 140–214. (Bulletin, 1934, No. 20)

[8] John, Walton C. "Standards for the Master's Degree," *School Life*, XXI (June, 1936), pp. 289–90.

degrees, nevertheless, the Master's degree is still included; the Hahnemann Medical College, for instance, awarded two Master of Arts degrees *causa honoris*.[9] Papers read before the American Association of Universities in 1910, 1927, 1931, and 1936 all frowned upon the practice of awarding as honors those degrees regularly earned by residence study.

The current articles, dealing with the need for better standards and a coherent definition of the significance of the Master's degree, concur in the report of the American Association of Universities Committee. The first requirement is that a year of residence should be the minimum and that candidacy should be open only to those who hold the *primum gradum in artibus* from an approved institution. In exceptional instances, Johns Hopkins, however, reserves the right to dispense with the requirement of the baccalaureate degree.[10] Second, the program of courses should be on the graduate level. Though this regulation meets with general approval, many small institutions offering the degree do not have the faculty, the library facilities, and the financial strength to carry out the intent of this recommendation. Provision for class work, therefore, has to be made through special adjustments to fit individual cases in the smaller colleges. Often these provisions are questionable and perfunctory, and the graduate student does his work in undergraduate classes entirely. Third, the approved recommendation is that the student's proficiency be ascertained in a general examination. In practice, however, only the stronger institutions actually hold a comprehensive examination for the degree. Piecemeal courses, often distributed over summer sessions and extension classes, make up the program of a great many candidates. Fourth, there is a difference of opinion regarding the value of a thesis requirement which has been recommended by the Report of the American Association of Universities. In the competition for able students, institutions have to settle this problem on the basis of expediency. If the strongest institution in the area does not require a thesis, then the smaller colleges have to fall in line or lose students. In theory, the administrators seem to agree that a thesis is excellent training in research and that it should be a requirement, but in practice it would appear that policies are shaped by local exigencies.

THE contemporary procedures in setting up the requirements for the Master's degree do not directly reflect the best judgment of the Report of the American Association of Universities. There is much confusion as to the significance of the degree. This opinion is expressed by Grier in an article entitled "The Master's Degree and Scientific Research."[11] In general, the larger universities emphasize the degree as propaedeutic for the doctorate or as a final mark of preparation for secondary-school teaching. Some apparently use the Master's degree as a

[9] *Philadelphia Record*, June 11, 1937, p. 10.

[10] "The New Degrees in Education at the Johns Hopkins University," *School and Society*, XXIX (April 20, 1929), p. 508.

[11] *Science*, LXIII (June 4, 1926), pp. 570–71.

balm for discouraged, incompetent candidates for the doctorate. The smaller colleges use the degree to attract high-grade teachers-in-service to summer-school and extension offerings. It appears that the degree is rapidly becoming established as an essential part of contemporary teacher-training programs for secondary-school work; hence there is a conflict of judgment regarding the value of specialized research culminating in a thesis. Yet, in the field of medical education, Columbia has made an attempt to set the degree of Master of Science as a postgraduate medical degree to signify specialization.[12] On the other hand, the degree means to others nothing more than advanced preparation for educational work, and, as such, it should be granted by teachers' colleges. Such is the opinion of Swift in his article "Teachers' Professional Degrees."[13] More conservative faculty members often express a desire to restrict the number of institutions which award the degree, to restore the research work formerly required, and to raise the standards of admission to candidacy for the degree. Since, however, the Master's degree is becoming an integral part of teacher-training programs, these conservative standards cannot be maintained.

THESE ideals of high standards for the Master's degree are of comparatively recent origin in higher education, and those who would uphold "good old practices" seem to have forgotten the plan of awarding the degree "in course." Several respected institutions continued this practice right up to the days of the World War. Brought over from English university polity was the practice in American institutions of awarding the Master's degree after a perfunctory test, together with the payment of fees, to all holders of the Bachelor's degree who cared to bother about getting it. Harvard conferred the first Master's degree given in this country in 1642. In the Harvard Laws of 1655, mention is made of the requirements of nominal proficiency attested by "a written Synopsis, or Compendium of Logicke, Naturall Philosophy, morall philosophy, Arithmeticke, Geometry or Astronomy" and by good repute; but no residence whatsoever was necessary.[14] In 1872 President Eliot conferred the last Masters' degrees "in course" upon members of the class of 1869 and announced that henceforth Harvard would no longer grant the degree in such a manner. Harvard, by the way, conferred the first honorary degree in America, the degree of Master of Arts given to Benjamin Franklin *gradum causa honoris* in 1753. Columbia followed the example of Harvard in strengthening the requirements for the Master's degree, and announced that, after the 1880 commencement, "the degree of master of arts in course shall not be conferred upon bachelors of arts in this College of three years standing or more, who shall have passed an

[12] "The Master of Science Degree at the Medical School of Columbia University," *School and Society*, XXXV (January 9, 1932), p. 51.

[13] *Educational Review*, LX (Sept., 1920), pp. 136–46.

[14] Morison, Samuel Eliot. *Harvard College in the Seventeenth Century: Tercentennial History of Harvard College and University, 1636-1936*. Cambridge, Massachusetts: Harvard University Press, 1936. p. 148.

approved examination upon studies to be prescribed by the Faculty."[15] Twelve years later, however, the Statutes of Trinity College (Connecticut) prescribed that bachelors of two years' standing might obtain the degree by satisfying the faculty, on examination or "otherwise," that they had done the equivalent of one academic year of study. In 1921 Colgate awarded a few Masters' degrees to graduates who had paid in prescribed fees and satisfied the faculty by examination or "otherwise" that they had studied during the period following graduation.

This curious practice of conferring the Master's degree "in course" came right down from the medieval universities of Europe. In a period of three years following the baccalaureate degree, advanced students might continue for study of the more difficult works of Aristotle. When, however, the writings of Aristotle ceased to attract the exclusive attention of students, those who chose to remain at their studies for this additional period might read in any field they selected for the Master's degree. No one who did not take the Master's degree was really considered a university man, and most students did their advanced reading in divinity. The seven years then constituted the complete *septennium* and rounded out the full-fledged "artists." Various engineering schools today still keep up the old practice by awarding degrees such as M.E., C.E., and E.E. upon their graduates who give evidence of academic attainments after graduation and who pay the fees. A degree of Master of Arts or Science awarded today in this "good old way" would shock academic conservatists, and yet this practice has far more tradition behind it than does the new idea of upholding high standards for the degree. The meaning of the Master's degree as indicating high scholarship grew up at Harvard University under President Eliot's leadership, and the contemporary alarm over lowered standards may be attributed to the fact that the degree is taken by increasing numbers of teachers who have no interest in specialized scholarship. Actually, therefore, the appeal for raising standards, now voiced in university circles and in professional journals, would revive a comparatively modern practice with respect to the Master's degree.

THE earliest degree to be established in medieval universities was the licentiateship, *licentia docendi;* and it was essentially a recognition of fitness to teach. To be sure, Pope Alexander III decreed, about 1170, that ability to teach was a divine gift, and that any worthy man called to teach might set up a school. This pronouncement, however, was at variance with the judgment of other churchmen. Pope Gregory IX, for example, recommended the most careful investigation of the candidates' ability. At first the chancellor, as the representative of the Pope, had the sole right to confer the degree; and the teachers had practically nothing to say concerning the fitness of the recipients. At Paris in 1213, the teaching faculty took over control

[15] *A History of Columbia University, 1754–1904.*

of the degree and henceforth determined the attainments of the candidates. The title, *Master*, was taken over from the trade guilds and could be assumed by the holder of the licentiate, *jus ubi docendi*, when formally inducted into a faculty. "The graduate was styled a *Magister*, a *Doctor*, or more rarely a *Professor*, of the subject on which he had received the licence to teach, the three titles signifying alike that he was actually a teacher, and not merely, as now, that he had passed certain examinations or performed certain exercises."[16] In other words, the Master's degree was in early times, as it is again coming to be, the teacher's degree; and the procedures in the other three faculties of the medieval universities were largely patterned after the practice of the arts faculty.

According to the *New English Dictionary*, the Master's degree originally conveyed the authority to teach. This is slightly in error, since the title was assumed after the licentiate, who had secured preparation for teaching, had found a place on a faculty. *Magister* was originally a title and not a degree; it became a degree later on. Juan Luis Vives (1492–1540) wrote, at a time when the Master of Arts had been established as a degree, that it is futile to regard any degree as a qualification for teaching and that schools should return to the old practice of making the *gradus docendi* obtainable only after a probationary period. The title of *Magister* was assumed originally after ceremonious induction of a licentiate who had proved his worth to a company of Masters. There was then no argument about theses, credit for correspondence work, or any other similar question perplexing to the mind of the modern administrator. Nor did any question exist regarding the relationship of the doctorate to the mastership. In general, the two titles were equivalent. At medieval Oxford and Cambridge, the Master's degree in the Faculty of Arts corresponded exactly to the doctorates of other faculties. From the standpoint of the history of higher education, it is an anachronism to consider the Master's degree as propaedeutic for the doctorate, just as it is out of place to appeal to tradition to substantiate arguments for high standards for this degree. Current thinking about the significance of the degree and the standards for it might be clarified if educators recognized the fact that almost any practice might be supported by appeals to educational history. The principal fact now to be taken into account is that teachers want, or are compelled to obtain, a Master's degree for secondary-school teaching, and that these candidates make up over ninety per cent of all who strive to win the degree. Almost any sort of program which will lead to this degree can be amply justified by appeals to history.

[16]From Savigny, *Geschichte des Homischen Rechts*, quoted by Lyte, H. C. M., *History of Oxford* (New York: Macmillan Company, 1886. p. 5).

Genesis of the Engineer's Outlook

By GILBERT E. DOAN

All Work with No Breadth of Interests Makes a Dull Man

THE annual conventions of professional societies bring one into contact with so many classmates and former associates, and if one is a professor, with so many former students, that the end of the day leaves a composite picture clearly in one's mind of the kind of lives a whole profession—its geniuses and its rank and file—leads. It is a university professor's serious responsibility to speculate upon the excellencies of this composite life of the graduates, and even more incumbent upon him to discover the shortcomings and mistakes in this life that he sees, at least in so far as these shortcomings can be corrected by university teaching.

The Metals Congress at Cleveland is a case in point. The dozens of classmates, students, research colleagues in industry, wives, children, and clients one meets there must be fairly representative. The head of each of these families has gone out from college to accept a job, usually in an industrial city, and away from his home. Each graduate has been eager to put his dearly won training to use and determined to make a success of his career. Often he has small debts to pay, and, in order to save money out of a salary of $100 or $125 a month, he lives modestly, renting a room somewhere away from the center of the city, with an hour's streetcar ride each way, stopping at a restaurant on the way downtown for breakfast and again in the evening—perhaps after a swim at the "Y"—for dinner. Maybe at first he rooms at the same house with men from the plant, but sooner or later the group is broken up by transfers to the company's branch plants or offices.

The deep thrills in his life come from his job. He is given responsibility. He is shown how his successes mean the company's success against stiff competition. Money and power are put into his hands in abundance to experiment and to improve the operations in which he is engaged. Perhaps he is sent on long trips for the company, with all expenses paid, and he soon finds that all his petty financial troubles fade as long as he does well in his job.

His job comes to be the deepest interest of his life. If he had no friends in the city when he arrived and has had little or no chance to acquire them, he invites one of the company employees when he wants a companion in the hours off duty, perhaps a stenographer, and the "company angle" thus prevails throughout

his waking hours. Outside his job there is just his room at the apartment, with perhaps a group at his church made up of other young men as homeless and alone as he is. I remember becoming president of a class of one hundred such young men at Cleveland a year or two after I was graduated from Lehigh. We played basketball, went on hikes, organized public-speaking courses, and all the rest; but almost everybody in the group was, like myself, a homeless boy seeking a career in the great city. We could not afford to live at the University Club, and the Y.M.C.A. is really institutionalized homelessness.

The point I want to make is this: A young man in a strange city soon gives his entire life to his job. His interests, already narrowed by specialization at college or university, are now further restricted by the lack of a balanced environment such as family life provides, or the rich companionships of his college days. Is it any wonder that he can talk nothing but business after he is married? Is it surprising that he does not take an intelligent interest in his family's concerns or in community or national affairs?

WHEN he has made a success in his professional career, when the push and hurry have led him finally into a position of some freedom from petty details and small jobs, when he pauses in his progress to contemplate what he has built and to ask speculatively, "What does it all mean?" what is his conclusion? Simply this: He is glad he has been able to provide well for his family and proud to live with some evidence of success. The men at the head of his company are men of power and position. He rejoices in his association with them. He sees things at the plant being done better and cheaper and perhaps on a larger scale than when he came. He concludes that after all, this is all there is to life.

Gradually he has groped his way toward a solution of life's larger problems. Usually, the solutions are reached, but unconsciously, with one fundamental viewpoint uppermost, and that is, of course, his company's viewpoint. Its interests and its welfare have become the most real and worth-while in his world. His company or his profession holds the best years of his life. It must be considered first in every piece of legislation, local or national. Even his family must be moved hither or yon or neglected for months in order that his chief monument—his contributions to the growth of his company or to his department of it—shall stand.

His solutions of the larger social problems of life are his own, worked out after talking things over with his colleagues at the plant and reading the newspaper. Often he is proud of this independence of thought. His solutions are not made in the broad and mellow light of the understanding of man's problems that has come shining down to us through the ages from statesmen and philosophers. The engineer's education today provides no such cultural foundation. The high schools should, but they do not. His solutions are not made even in the light of a knowledge of present-day social diagnosis, for the average professional man is sure he

cannot afford the time to read these things. If the above-average man does not prefer subordinates who think only in terms of the company's welfare, he is regarded as an impractical dabbler. Can the American economic system, with its complicated interrelations and delicate balance, survive if no wider vision than is essential to the company's welfare is displayed by the small but highly important group of citizens who are graduates from our colleges and universities? Can the fundamental questions of American survival be left to our office-seeking professional politicians?

Thus have the typical American business and professional successes been built; thus has the national outlook of the most powerful group in America come to be what it is; thus has the figure of Babbit become, in the eyes of the world at large, the symbolic figure of American life, and the colleges and universities are not without guilt.

What can be done about it? Why not let it alone, let the graduate continue to find life unimportant except for his own occupation. Why try to awaken him? Is it not enough for a university to teach him how to make a material success of life? Is there anything more in life than that?

Laboratory by Demonstration

By WEBSTER CHESTER

Certain Revisions of the Techniques of Beginning Biology

SINCE many of the persons who elect the first-year courses in science have various interests, laboratory studies that are adapted to the few students who intend to specialize in the subject will not fit the needs of the larger group. About twenty per cent of those who elect our first-year work in biology take further courses in it. The eighty per cent include those who consider the subject a necessary one because it satisfies one half of the science requirement for graduation, or because it is a prerequisite for other department courses, or because of its general cultural value. The larger group will gladly accept whatever textbook exercises the smaller group accepts, but the laboratory exercises adapted for the twenty per cent will not do for the eighty per cent. The problem, then, is what shall constitute the content of the laboratory for this group that has such a slender interest in the subject-matter. And what shall be the emphasis in method and how much shall be demanded?

We have had this problem before us for a long time. For many years we have offered the stereotyped methods of study. Unfortunately, we were allowed only two hours per week for a laboratory period. We furnished the usual environment of tables and instruments. Our materials were always the best we could procure. Our divisions were not too large. We never had places for more than thirty-two students and we insisted on the presence of two instructors. We advised the very best laboratory outlines that could be procured. In some years we supplied our own mimeographed directions. The requirements included the usual diagrams and notes of observations. These were submitted at the end of the period and returned the following week with corrections and advice. We had the usual experience of finding diagrams from any local area in the room very similar. Many times an error in one appeared in the papers of others. As usual there were many who rushed through the period and attempted to ooze out of the laboratory before the two hours were up. We often wondered if the unwilling return to their seats with advice to do the work over again amounted to anything. A sulking student is no more attractive than a sulking child.

We were much encouraged when students worked beyond the two-hour period. We felt assured that they evidenced greater interest thereby. We felt that, since the laboratory

allowed them to see the objects, to handle them, and to measure them, and since they were urged to offer explanation for the parts discovered, the laboratory was a great help to them. We constantly urged that they explain, wherever possible, the subject-matter of the lecture or recitation in terms of what they had experienced in the laboratory. We do admit that, whenever we examined them on the things already covered in the laboratory exercises, we seldom had good results. In fact, it was the succession of failures to evidence much value from laboratory studies that made us question their efficacy. And in addition there had been in recent years a number of incidents concerned with laboratory method and content that had raised in our minds some doubt.

The following incidents may be noted. We were studying a starfish. On the ventral side there are areas where there is only one row of spines and other areas where there are two rows. It had seemed to us that accuracy of observation was a primary necessity when approaching a scientific fact. One student had placed on her diagram a few lines, and she had evidently not noticed the differences in the number of spines. We therefore asked her if the animal had one row or two rows of spines. Without examining the object she asked: "What difference does it make?" And since then we have asked ourselves that question many times, when we have been trying to ferret out what should and what should not be presented to a class. Really, what is worth while?

For a long time we accepted overtime work in the laboratory with a bit of personal pleasure, for such an act on the part of the student tickled our pride. We were a little surprised to find in one case that the spirit of the student who was accustomed to spend extra time each week was one of anger because his neighbor finished on time, and he forced himself to stay one or two hours extra.

A few years ago a student who was majoring in history or economics surprised us by saying that he had taken enough science to satisfy our requirements for graduation but that he was not interested in finding out whether or not the author of a laboratory manual had told the truth. He was willing to take for granted what was printed without trying it himself. These illustrations of the attitude of students are not exceptional. Many of them are fed with too great doses of detailed laboratory facts and they are nauseated.

AS A result of all of these experiences in 1932, we felt that we should try to test out methods of laboratory practice. We therefore allowed one division of 28 students to follow implicitly the laboratory directions we were using. We limited the amount of work that should be covered in each period. We remained in the laboratory and were on call if help were needed.

For another group of 28 students we gave directions orally, made diagrams of what they had dissected or what their dissection should have shown, and assistants helped those who were in trouble and could not

follow directions. Some students were very slow; some rapidly followed directions, while some lost connection until they were individually directed.

In another section we divided the group into two parts, about fourteen in each. We used the dissections of the second group as demonstrations or made better dissections and were more careful in the details of the dissections. Attention was called to these parts. Each student was supposed to follow carefully the oral directions given by the instructor and mark the facts. Each of these groups came into the laboratory for one hour only. We furnished each one with a mimeographed diagram of the objects. Because we thus reduced the student's labor, it was possible within the hour to cover as much ground as was covered in the two hours before. At the end of the hour when the second group came in, the demonstration was repeated to them. With these particular groups we studied the earthworm. Two periods representing four hours for the first two groups and two hours each for the third group constituted all the time we could spend. We then tested them over the subject covered.

It was obvious that the members of the first group did poorly, even though many of them had worked beyond the two hours required for the exercise. In the other two groups results were nearly the same for each. If there seemed to be any advantage, it was with the second group. We were amazed that those spending one hour only in demonstration could nearly equal those who had been spending the two hours. We tried out during the rest of the year, in the remaining exercises, similar experiments, and each showed the inferiority of the first method. These experiments gave us enough basis for changing our whole method of laboratory study.

The next year we decided to divide our students into small groups and to place an instructor with each of these groups. We therefore divided a class of 120 students into six divisions of 12 each and six divisions of 8 each. A division containing 12 and one of 8 students met in different rooms at the same time, and each instructor went over the work with those students seated near him. This demanded many repetitions of the same demonstration. We found later that we could combine to advantage these two divisions of 12 and 8 into one group, placing them at tables so that no student was far away from the instructor. More than 20 students we found to be too many. This larger group of 20 students could be guided to advantage, if only we had enough helpers in the laboratory.

IN THE last four years we have always had two senior students and an instructor at each period. The student assistants are given a thorough drilling in the details of the demonstration before the period begins. They are really mechanical aids. They help in identifying parts and assist in keeping the student up with the directions given. Five tables are arranged as in the letter E, four students at a table. The instructor stands in the left middle of the E where three tables meet. The blackboard is behind him. Directly in

front, a stereopticon with a very short focus objective projects on the curtain over the blackboard. There is also the usual arrangement for charts. Each student is provided with the usual laboratory equipment. Slides and covers and instruments are before him on the table. It is not necessary for the student to move after he is seated at the table. All preparations are placed in front of him. He supplies himself with note paper and notebook cover.

The method in action demands of every single student the strictest attention. The instructor begins exactly as the bell has stopped ringing. Special attention is given to make clear the object which is to be studied. Each student studies his own preparation independently. We always try to make them tell us what has had to be done to obtain the preparation in hand. If they cannot tell, care is taken to see that they understand. All the diagrams are made on the blackboard, with copious explanations during the drawing. The students are advised to take just enough notes so that they can write up the laboratory exercise outside more completely. At the end of the period, printed diagrams of what they have studied are given them, which the students are to label carefully soon after the exercise. Later these are called for and examined.

A question on the part of the instructor is sufficient to make even the most uninterested student respond. Of course this method works most effectively with the bright students. The assistants are told to stand by the weak students and urge them on. The number of these latter is very few, as most students respond to the challenge of a question. The interest on the part of almost every student is obvious. If there were no other advantage than this, the method would be worth while. No student looks at the clock to see if the end of the hour is near. In fact, when the bell rings at the end of the hour, surprise is manifested on the part of each student.

Frequent quizzes on the laboratory exercises make demands for reviewing the subject. Emphasis on the methods employed in making a demonstration of a dissection brings to the minds of the more observant what needs to be done with instruments to make a perfect dissection. The diagrams show them how note-taking of observations can be accurately carried on. When studies demanding the use of the microscope are introduced, the method answers well. Since the mechanical act of every student is observed by the instructor, errors in the use of the instrument can easily be detected. When a student is in trouble with his preparation or his instrument, a gesture on the part of the instructor brings an assistant to the side of the troubled student.

LET no one think that this method makes the laboratory cost less than before. There must be an abundance of material; for any particular part a number of different specimens are needed. Thus, to show the heart of the frog, there is needed a frog with the heart in position, a frog showing the truncus injected, a heart removed to show dorsal appear-

ance, and a heart cut in two for internal structure. Every student must be supplied with a number of living hydras. Every slide must show a number of large living amoebae, and paramecia must be in great numbers. Success is not possible in the use of such a method unless objects are easily accessible.

Of course it is true that the actual use of scissors and scalpel is denied the student. Yet we find that when the student approaches the higher courses in anatomy he is not handicapped by possessing a laboratory technique which is wrong. He is then in a group that confesses its willingness to have the patience to learn technique correctly. Also we find that students approach the courses where the microscope is a major instrument without having acquired a bad technique.

Comparisons of Receipts

By O. I. FREDERICK

Receipts of Twenty-three Land-Grant Universities Compared with the Receipts of Nineteen Non-Land-Grant Institutions

ALL persons connected with institutions of higher learning, and many others, are vitally interested in the financial welfare of those institutions. A report of the receipts of state universities and certain trends and comparisons with respect to these receipts, therefore, seems very appropriate.

This article is written with a view to accomplishing three purposes. The first aim is to indicate the increase in the receipts of each of the 42 state universities during the eight-year pre-depression period from 1921–22 to 1929–30. Although the economic recession began in the autumn of 1929, the receipts of higher institutions of learning were not affected by it much during the year 1929–30. The second aim is to show what the various state universities would receive for the year 1937–38 if the same amount of increase in receipts were made from 1929–30 to 1937–38 as from 1921–22 to 1929–30. Obviously, the depression has temporarily reduced the incomes of state universities; but doubtless, with returning prosperity, those in charge of state universities will make every effort to regain lost ground and will try to catch up quickly with the march of progress. Therefore, the figures given in Table I for 1937–38 appear to be desirable goals to be approached as rapidly as possible by the state universities. The third purpose of the article is to make certain comparisons and to make apparent the need for some state universities to have their receipts increased at a much faster rate than in the past if they are to keep pace with the march of progress.

The receipts of the state universities from student, public, and private sources (exclusive of additions to endowment and increase of plant) for 1921–22 and 1929–30 were taken from the *Biennial Surveys of Education* made by the United States Office of Education. The ranks, increases, and the hypothetical figures for 1937–38 given in Table I were calculated from the data secured from the *Biennial Surveys*. In the table, the state universities are grouped into two classifications: the 23 state universities which are also land-grant institutions and the 19 state universities which are separate from land-grant colleges (numbers 24 to 42). Thus, 42 state universities are included in the report.

The number of state universities which have receipts exceeding a million dollars per year increased from 19 in

TABLE I

Receipts Exclusive of Additions to Endowments and Increases of Plant

State Universities	Thousands of Dollars during Fiscal Year:							
	1921–22*	1929–30*	Rank		Increase in 8 Years		If Same Hypothetical Increase in 1937–38	
			1921–22	1929–30	Amount	Rank	Amount	Rank
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Arizona	$ 887	$ 1,545	25	27	$ 658	29	$ 2,203	26
2. Arkansas	901	1,560	24	26	659	28	2,219	25
3. California	7,004	12,095	1	1	5,091	1	17,186	1
4. Delaware	474	689	36	37	215	40	904	37
5. Florida	674	2,432	29	16	1,758	9	4,190	14
6. Georgia	1,004	1,734	19	24	730	24	2,464	24
7. Idaho	935	1,383	22	30	448	30	1,831	31
8. Illinois	4,956	7,146	5	6	2,190	7	9,336	6
9. Kentucky	1,242	2,419	16	17	1,177	19	3,596	17
10. Louisiana	755	1,710	27	25	955	21	2,665	23
11. Maine	816	1,502	26	28	686	27	2,188	27
12. Maryland	1,024	2,579	18	15	1,555	12	4,134	16
13. Minnesota	6,361	10,981	2	2	4,620	3	15,601	2
14. Missouri	2,472	3,901	8	8	1,429	14	5,330	8
15. Nebraska	2,817	3,850	7	9	1,033	20	4,883	10
16. Nevada	465	678	37	38	213	41	891	38
17. New Hampshire	720	1,408	28	29	688	26	2,096	29
18. Ohio State	3,381	8,019	6	5	4,638	2	12,657	4
19. Tennessee	1,050	2,609	17	14	1,559	11	4,168	15
20. Vermont	665	1,087	30	32	422	31	1,509	32
21. West Virginia	1,361	2,210	15	20	849	22	3,059	21
22. Wisconsin	5,375	8,371	3	4	2,996	6	11,367	5
23. Wyoming	463	846	38	35	383	32	1,229	34
24. Alaska	497	1,263	34	31	766	23	2,029	30
25. Colorado	967	2,230	21	19	1,263	18	3,493	19
26. Indiana	1,366	3,057	14	12	1,691	10	4,748	11
27. Iowa	1,884	5,428	10	7	3,544	5	8,972	7
28. Kansas	1,419	2,123	13	21	704	25	2,827	22
29. Michigan	5,282	9,686	4	3	4,404	4	14,090	3
30. Mississippi	194	460	41	41	266	37	726	40
31. Montana	486	727	35	36	241	38	968	36
32. New Mexico	189	419	42	42	230	39	649	41
33. North Carolina	921	2,741	23	13	1,820	8	4,561	13
34. North Dakota	664	1,046	31	33	382	33	1,428	33
35. Oklahoma	1,521	1,840	12	23	319	34	2,159	28
36. Oregon	987	2,253	20	18	1,266	17	3,519	18
37. South Carolina	258	535	40	39	277	36	812	39
38. South Dakota	344	493	39	40	149	42	642	42
39. Texas	2,350	3,676	9	10	1,326	15	5,002	9
40. Utah	580	874	33	34	294	35	1,168	35
41. Virginia	612	1,935	32	22	1,323	16	3,258	20
42. Washington	1,613	3,092	11	11	1,479	13	4,571	12
Averages:								
Numbers 1 to 23	1,991	3,511	.....	.....	1,520	.....	5,031	.....
Numbers 24 to 42	1,165	2,309	.....	.....	1,144	.....	3,454	.....
42 universities	$1,617	$2,967	.....	.....	$1,350	.....	$4,317	.....

1921–22 to 33 in 1929–30. Calculations based on Table I show that the receipts of the 23 state universities which were also land-grant institutions averaged $826,000 more in 1921–22 and $1,202,000 more in 1929–30 than did the receipts of the 19 state universities separate from land-grant institutions. Thus, it is apparent that on the average the increase during the eight-year period was $376,000 more per university in the first group than in the second group of state universities. This may be explained readily by the broader scope of work, in general, of the state universities which are also land-grant institutions than of those separate from land-grant institutions, and by the increasing support they receive from the Federal government.

The average of the receipts of all 42 state universities increased from $1,617,000 in 1921–22 to $2,967,000 in 1929–30, an increase of $1,350,000 per institution during the eight-year period. Quite naturally, the state universities with the greatest increases in receipts from 1921–22 to 1929–30 were, in general, the larger and stronger institutions. On a percentage basis, some of the other institutions made rapid strides.

The state universities which made the greatest improvement in rank during the eight years from 1921–22 to 1929–30 were the University of Florida, the University of North Carolina, and the University of Virginia—all southern institutions. A glance at Table I will reveal that a few state universities lost greatly in rank during that period. Most of the state universities retained approximately the same rank in 1929–30 as they had in 1921–22.

The hypothetical figures for 1937–38 are presented in Table I to indicate what the receipts of the various institutions might be in 1937–38 if the depression had not interfered with the rate of progress of those institutions. The 1937–38 figures may be considered goals to be reached by the respective institutions as soon as possible.

OBVIOUSLY, the state universities with the smaller receipts will have to increase their receipts as much per year in actual amounts of money as the average of the state universities of their type or they will continue to fall farther and farther behind the average in receipts. Achieving a greater percentage increase per year than the average does not prevent the actual receipts of an institution from lagging further and further behind the average receipts. Take, for example, the University of Mississippi in comparison with the average of the other 18 state universities separate from land-grant institutions: the receipts of the University of Mississippi were 137 per cent greater in 1929–30 than in 1921–22, whereas the average for the other 18 state universities increased only 98 per cent. Nevertheless, as indicated in Table I, the receipts of the University of Mississippi in 1921–22 were $1,025,000 less than the average of the 18 other state universities in 1921–22; whereas receipts of the University of Mississippi were

Footnote to Table I:

*Based on: U. S. Office of Education *Biennial Surveys of Education:* 1920–1922, Bulletin, 1924, No. 14, Vol. II, pp. 361–64 and 1928–1930, Bulletin, 1931, No. 20, Vol. II, pp. 418–23.

$1,952,000 less than the average in 1929–30. Similar comparisons, based on Table I, might easily be made for other states by any one desiring to do so. It is evident that the support of the smaller state universities will have to be increased rapidly or they will fall more and more below the average of state universities in their receipts.

A few trends and comparisons with respect to the receipts of state universities have been considered in this article. It is hoped that many readers will use Table I to make many other comparisons of interest to them.

· *With the* · Technicians ·

To promote faculty growth and stimulate thought regarding general educational problems, Bethany College has inaugurated a faculty seminar held during the week preceding the opening of the fall term and an education-day conference in the month of April. The faculty seminar for September, 1937, had as its integrating problem upper-division teaching. Six papers were presented by regular members of the faculty during a three-day period. Open discussion limited to twenty minutes followed each paper. Guy E. Snavely, executive secretary of the Association of American Colleges, addressed a special evening session.

The education-day program brings to the college campus school people from the tristate district. Speakers for the last conference were Dean Clyde M. Hill, of Yale University, and Earl W. Anderson, of Ohio State University. The conference for next spring will bring to the campus George A. Works, of the University of Chicago, and Mr. Spaulding, of Harvard University.

Co-operative Study of Secondary-School Standards[1]

Marked progress in developing standards for evaluating secondary schools resulted from a meeting of the Executive Committee of the Co-operative Study of Secondary-School Standards which was held in September. Representatives of the six regional associations which are associated in the Co-operative Study spent almost a week in a careful review of the progress which has been made since they met in May, 1936, at Washington, and in formulating plans for the completion of the Study.

During the past year members of the staff of the Co-operative Study have visited every state in the Union and studied intensively two hundred schools. Data were accumulated concerning many aspects of the work, and these are being summarized and analyzed in the research office at Washington. These schools will all be carefully classified on a wide variety of significant measures, which will be used as bases for the revision of criteria and for the development of scales for evaluation.

The field and office work during the past year has cost approximately $75,000—a saving of almost $10,000 over earlier estimates. The budget adopted by the Executive Committee for the current year provides for an expenditure of $57,000 for research, interpretation, and publication.

Arrangements were approved by the Committee for distribution during the year of detailed reports to the two hundred co-operating schools, and for the circulation of printed summaries

[1]For a summary of the previous reports of the Study, *see* the JOURNAL OF HIGHER EDUCATION, VII (March, 1936), p. 162.

dealing with a dozen significant phases of the work to the seven thousand schools which are members of the six regional associations. Arrangements were also approved for interpretation of the work of the Study through a series of articles in educational periodicals, addresses before national and state associations, and radio broadcasts.

Plans were adopted for publication at the close of the present year of a revision of the present tentative evaluative criteria, for a comprehensive volume reporting the results of the four-year study, for a popular summary of this research volume for extensive distribution, and for other related publications. Plans were made for two meetings next spring of the General Committee of Twenty-One, sponsoring the Co-operative Study. One will be held at Atlantic City in February and one in March or April to approve final revision of the evaluative criteria and to develop plans for their practical use in the constituent associations.

Intellectual Output of Sixty-one Secondary Schools[2]

Where selective admission is practiced, the question as to whether the marks from certain high schools should be weighted is of special importance. A study of the students of 61 secondary schools in Ohio was undertaken to ascertain whether or not there existed any significant differences in the quality of students entering Oberlin College from different secondary schools.

[2]Reported by L. D. Hartson, Oberlin College.

The inquiry covers the twelve-year span from 1923 to 1934, a period for which comparable psychological-test scores are available. As the methods of test administration have not always corresponded to those used throughout Ohio, it has been necessary to use local norms for equating the test scores. Secondary-school marks were equated on the basis of the system in use in the Oberlin office of admissions, in accordance with which a student's "credit points" are computed in terms of the extent to which his marks are higher than the passing standard in his school, after adjustments had been made to equalize the different passing standards. College scholarship is here handled in terms of rank in class during the first semester of the freshman year. As no two classes have the same enrollment, actual rank has been transmuted into proportional rank.

The Oberlin student body is rather far-flung in its derivation. For this period of twelve years there are but fifteen schools that have sent as many as twenty-five students. By using 10 as the minimum, we found it possible to raise the number of schools to 61. The total number of students included is 1,530. The other 2,680 students in these classes came from 1,426 different high schools. Although one will be cautious in the generalizations drawn from the cases where the members are so small, it may be emphasized that these samples spread over more than a decade. Twelve years ought to suffice as a basis of expectation concerning the quality of student a college is attracting from a particular school.

Observation of the tabulated data shows that there is a relatively close correspondence between the ranks in college scholarship and in intelligence-test scores. The median disparity in rank order in college scholarship and psychological-test score is 10 places. On the other hand, the correspondence between the rank orders in college and high-school scholarship is only about half as close, the median disparity being 19 places. When correlations are computed, using the means of the raw scores rather than the rank figures, the relationships are represented by the following coefficients:

	Coefficient of Correlation
College scholarship and O.S.U. test scores	.706
College scholarship and high-school scholarship	.192
High-school scholarship and O.S.U. test scores	.148

These coefficients represent not the relationships for individual students, but for the "average student" from each of these 61 schools. Since one is interested in anticipating the probabilities of scholastic success of the product sent from the different schools, these figures point to one significant contrast: the score on the psychological test constitutes a much better basis for predicting the college success of the average student from a particular school than does his high-school record. In terms of the predictive index[3] for individuals, the contrast may be expressed as follows: one who knows only the high-school scholarship of this average student can make a prediction, which will be 2 per cent better than mere chance, of the marks which he will make at Oberlin. In other words, it is impossible to use the high-school records of the student sent to Oberlin as a criterion for evaluating the relative academic output of these schools. Knowing the intelligence-test score of this same average student, on the other hand, one has a 30-per cent better-than-chance possibility of predicting the student's success.

One obvious use for data of this sort is for obtaining light upon the relative marking standards of different schools. These samples suggest the existence of marked contrasts. For example, School 8 ranks 15.5 (high) in high-school scholarship but only 53 (low) in college achievement, whereas School 33 reverses the relationship by achieving ninth place in college scholarship (high) on the basis of a rank of 46.5 (low) among the high schools. It would be obviously necessary to pool results from a number of colleges before one could avoid the sampling error and make a safe generalization with reference to the marking standards which prevails in these or other schools, but with such massed data one might be justified in introducing a scheme for weighting the marks from some schools.

Attention is attracted to another type of contrast, to be characterized from the point of the individual as "motivation" or "quality of personality." Whereas the students from some schools show a college achievement record much higher than might have been predicted from either their scholastic record or their test scores, the students from others fail both in high school and college in achieve-

[3] The formula used was $1-\sqrt{1-r^2}$.

ments commensurate with their intelligence-test scores.

Mr. Toops in the "Ohio College Association Bulletin" comments on Mr. Hartson's study as follows:

> By computing the average college achievement, high-school scholarship equated by the method used in the Admissions Office of Oberlin College, and Ohio State University Intelligence Test scores, Mr. Hartson . . . shows that intelligence is a relatively valid measure for rating the probable college attainments of the students in general of a given secondary school coming to one college over a period of twelve years. All schools sending ten or more students to Oberlin in that time were included. The intelligence averages varied from 38 to 75. The gross indication from the means is that the graduates of some schools are powerfully motivated, while the graduates of others are negatively motivated.
>
> This study does not prove the nonworth of high-school scholarship in individual cases, since obviously the students of higher scholarship, and therefore in general of higher intelligence, of a given school obviously are better students than the poorer. Neither does it prove that it is impossible to determine a method of weighting the scholarship of a given high school so that the marks will reflect the local differences in standards.

Required Physical Education

Required physical-education courses for college women appear to be justified by improvements in physical control and better attitudes toward health and physical activity, according to a study made at the University of Minnesota by Elizabeth Graybeal. The study, just published by the University of Minnesota Press with the title *Measurement of Outcomes of Physical Education for College Women*, was undertaken to obtain objective data on the value of required physical training for women.

The Department of Physical Education for Women sponsored Miss Graybeal's work, with the co-operation of the Committee on Educational Research at the University of Minnesota. A group of 368 entering Freshmen participated in the regular required courses in physical education, and 347 were not allowed to take part in any of the required classes. A series of tests of motor ability, knowledge, and attitudes concerning health and physical activity were given both groups to determine the effect of the courses.

The late Dean Melvin E. Haggerty, of the College of Education and chairmen of the Committee on Educational Research, in the Foreword, says:

> The decisions of college teachers upon what college students should be required to study are markedly influenced by the traditions of higher education, and not seldom by the personal and vested interests of the teachers themselves. . . . The real significance of this study lies in the fact that it represents a courageous effort of a university organization to derive the knowledge it needs for the guidance of its own efforts.

·The·Reporter·

THE women's colleges of Oxford University have announced a summer course for American women to be held in Oxford during July, 1938. The subject of the course will be, "England in the Past Fifty Years." It will convene on July 6 and close on July 27. A number of England's outstanding scholars will lecture at this summer session.

THE fiftieth anniversary of the founding of Goucher College will be celebrated on October 15, 1938. The college was incorporated in 1885, but students were first admitted in the autumn of 1888. It is the latter date which will be celebrated.

FOURTEEN courses for adults not registered in the regular courses of the University of Wisconsin are being offered during the evening. The courses are liberal rather than vocational and include literature, history, science, arts, and philosophy.

THE General Education Board has underwritten a two-year study of radio broadcasts for schools to the extent of $69,000. The study will be conducted at Ohio State University, and evaluation of broadcasts will be undertaken in social science, science, English, and music.

THE President of Fordham University has announced that the University will guarantee satisfaction of all its graduates to any employers hiring them. Stressing the utilitarian methods abhorrent to many educators President Gannon observed in part when he made his announcement: "We in education are making a mistake today. It costs from $4,000 to $7,000 to turn out a finished product and then forget him. No manufacturer would think of selling a $7,000 airplane, automobile, or any other product without complete servicing to the client."

IN THE neighborhood of fifteen thousand students at the University of Pittsburgh have during the past fall taken the free Wassermann syphilis test sponsored by the University health services and the City Department of Public Health.

THE experience of the University of Chicago with voluntary class attendance has been successful during the past six years, President Hutchins has recently announced. Fewer students have cut classes under the present plan than under the compulsory plan. The President has observed, however, that "this indicates a slavish servility on the part of students that I deplore."

THE State Department of Public Instruction in Michigan has organized a Co-operative Bureau of Educational Research to be of continuous service to colleges in the state which desire

assistance on problems of curriculum, evaluation, and guidance. The service is to be made available particularly to teacher-training institutions. The undertaking is being financed in part by the General Education Board and will be directed by Kenneth L. Heaton.

STUDENTS of German at the University of Michigan are improving their knowledge of the language by weekly singing sections during which German songs are sung under the direction of J. A. S. Hildner. Approximately thirty songs are sung at each weekly meeting. Words of the songs are written on charts or in mimeographed songbooks compiled by Mr. Hildner.

TWO students in New College, Columbia University, will be able to earn scholarships, beginning in February, as the result of their activities in social movements. The head of the College observed:

> Other schools subsidize athletes, and the prizes we are offering are going to encourage the socially conscious student. They are open to persons of any opinion, from extreme left to extreme right. We urge the undergraduates to go beyond academic neutrality and to participate in the social life surrounding them.

One of the scholarships will be for $200, the other for $50.

THE program of student analysis at Wellesley College is being expanded. In addition to widely used intelligence tests the College has in the recent past been giving to all students the Bernreuter "Personality Inventory" and the "Values" test of Allport and Vernon. Also, this year will be given the Wrenn and McKeown "Study Habits" and the Rothney "Vocabulary" test. These tests will be administered by the Personnel Bureau of the College, and their results made available to class deans and faculty advisers. The results will also be used by special counselors such as the college psychiatrist, the college physician, and the individuals responsible for social programs.

THE Wisconsin legislature has recently passed a bill requiring schools offering home-study courses to submit copies of their courses and sales contracts to the state superintendent of public instruction for his approval. All correspondence schools must also file an indemnity bond ranging from $2,000 to $10,000. The act is intended to safeguard persons from falling prey to unscrupulous sales practices and from spending exorbitant sums for courses that are often of little value. The superintendent of public instruction will also maintain in his office a complete file of all correspondence courses so he may advise individuals who write him concerning any schools or any particular course. In order to develop the superintendent's file, teachers throughout the state are now required by law to report violations of the new statute and also to investigate complaints sent them by the state superintendent.

ONE of the world's most famous libraries, the Bodleian Library of Oxford University, is being rebuilt with funds from a grant of $2,300,000 from the Rockefeller Foundation.

Oxford University will also contribute $920,000 toward this reconstruction. The new library will provide space for five million volumes, or four times as many volumes as are now included in the library. It is expected that, at the present rate of increase, space will be available in the new building for two centuries of growth. The cornerstone for the new building was laid on June 25, 1937, and the dedication is expected to be held about three years from this fall. While building reconstruction goes forward, a revision of the catalogue will be undertaken, making it possible for readers to find materials more readily.

THE Carnegie Institute of Technology has announced a co-operative arrangement with the Westinghouse Electric and Manufacturing Company which will go into effect at the beginning of the next academic year. The program involves the appropriation of $200,000 by the Company to the Institute. With this money a number of superior students will be given extensive shop and engineering experience in the Westinghouse plant. Ten of these students will be given George Westinghouse Scholarships. The fund also provides for the establishment of the George Westinghouse Professorship of Engineering. The individual chosen for this professorship will be in charge of the co-operative arrangement between the Institute and the Company.

THE University of Maine has constructed six cabins for the housing of needy students. Built from funds contributed by alumni and friends of the University, the cabins will house twenty-two students and will be the nucleus of a group of cabins to be constructed in the near future. Privately owned cabins, constituting a small community known as "Hungry Hollow," have been rented out to University of Maine students for a number of years, but because of the growing number of students in financial need the University is promoting this type of housing. Rent will be $1.50 a week for each student.

THE National Research Council has appointed a Committee on Scientific Aids to Learning, with President James B. Conant, of Harvard, as chairman. The Committee is to be financed by the Carnegie Corporation. In announcing the establishment of the Committee, Mr. Keppel, of the Carnegie Corporation of New York, discussed the work of the Committee:

> It is understood for the present the committee will concentrate its activities in the following fields: radio education, micro-photography, the use of the so-called business machines in educational activities, and certain aspects of the motion-picture industry.
>
> It may be expected that the committee will not only serve as a center of reliable but non-technical information as to new scientific tools, but may also lead to the application of older tools for new purposes.

THE authorities at West Point have announced their conformity to the three-year eligibility rule for its athletes. During all of its history, West Point has maintained that its cadets should participate in intercollegiate athletics while there regardless of whether or not they had previously

been members of other college teams. This position caused the break in football relationships between Army and Navy in 1928, and has prevented contests between the Army and Big-Ten institutions. No reason has been given by authorities of West Point for this change, but it is believed that pressure from other institutions has finally made Army authorities capitulate to general standards.

A NUMBER of students, faculty members, and administrative officers are complaining about the advertising of liquors at Big-Ten conference football games. At the Purdue-Indiana game, for example, two planes flew low over the stadium, one trailing a banner reading "Think before you drink," the other trailing a banner urging readers to "Say—and be safe." Steps are being taken by Big-Ten authorities to prevent such advertising at its games next year.

A NEW marking system has been adopted by the College of Literature, Science, and Arts at the University of Michigan. This new system gives numerical equivalents for letter marks in honor-points toward graduation. An *A* earns four points, a *B* three points, a *C* two points, a *D* one point, and an *E* zero.

This system has been in vogue for many years at most institutions, but Michigan has historically been conservative in its marking methods. The new program, as pointed out by the student daily, is not likely to change the quality of work necessary for graduation in so far as the honor-points for passing work is concerned. The new arrangement, however, gives a zero for *E* work which is contrary to former practices. Under the old system a student earning an *A*, *C*, *D*, and an *E* would be rated a little better than an average of *C*. Under the new plan he would rate a little less than an average of *C*.

THE Legislature of the State of Texas has appropriated $10,000 a year for the salary of the individual chosen to succeed the late H. Y. Benedict as president of the University of Texas. The Legislature has also approved the University's request that an additional $7,500 be made available from the University's endowment funds. A total of $17,500 will, therefore, be available as a salary for the individual selected. This action upon the part of the Board of Trustees has caused considerable comment since it will now be possible for the University to pay the president a larger salary than that received by the coach of the football team. Dana X. Bible, coach and director of athletics, is reported to be receiving a salary of $15,000, which is considerably higher than the salary received by President Benedict.

THE college unions all over the country are expanding in number and size. The $400,000 Union Building of the University of Nebraska will be ready for occupancy on January 1. The University of Wisconsin is expanding its building with a fund of $236,245 received from the Federal government and hopes for another $500,000 from alumni and student subscriptions to be collected by next spring. The new facilities will include

a theater and concert hall, workshops for a dozen hobby groups, and recreation rooms of many varieties.

At the University of Minnesota drawings have been completed for a new $2,000,000 building. A campaign will begin in the immediate future for the financing of the construction. The State Legislature of Wyoming last spring approved a $150,000 loan for the construction of a union for the state university. At the University of Illinois $100,000 has been raised to date, and a campaign for enlarging this sum will begin in the immediate future. The University of Kentucky expects to open its new Union next February. Rutgers has remodelled an old building upon its campus to serve as a Union. At South Dakota State College the Board of Control has begun to raise funds for a Union on that campus.

A STUDY recently completed by Lee J. Levinger for the B'nai B'rith Hillel Foundation has recently been published from the Cincinnati headquarters of the Foundation. The study reveals the fact that there are in the neighborhood of one hundred and five thousand Jews and Jewesses studying in institutions of higher education in the United States. This means that one out of every forty-two Jews in the United States and Canada is registered in some collegiate institution. These Jewish students make up over 9 per cent of the entire student population of the country, or three times the proportion of the student population to the whole number of the American people. The facts gathered demonstrate that in dentistry, law, pharmacy, commerce, medicine, and engineering there are many more Jewish students registered than their population ratio. For example, 26.37 per cent of the students studying dentistry in the United States are Jewish; in medicine 16.15 per cent are Jewish; in law 25.11 per cent are Jewish. This study is the most complete investigation of the Jewish student in America yet made. It has been published in mimeographed form and is available to educators by writing to the B'nai B'rith Hillel Foundation, 40 Electric Building, Cincinnati.

THE University of Wisconsin Alumni Association is inaugurating a placement program of alumni and student employment to operate in the various large cities throughout the United States. The new service is to have the following three objectives: to co-operate with the placement committee of the University faculty in finding jobs for Wisconsin graduates; to help Wisconsin alumni throughout the United States find jobs; and, in every way possible, to help Wisconsin graduates get acquainted and get started on life careers throughout the country.

About twenty-eight years ago the Alumni Association of Harvard University established a somewhat similar service. It is interesting to observe that in 1935 the University took over the service and made it a part of the regular service offered to students and former students. While the initiative of Wisconsin alumni is to be applauded, the experience of many other institutions, besides Harvard, leads

to the conclusion that the service must in time be made a regular part of the official student-personnel program of the institution.

THE University of Illinois announces that during the past year more than two and a half million people were affected by services offered by the University. These services included the following: 878,643 individuals receiving bulletins and publications sent out by the five research bureaus and experiment stations on the campus; 17,178 resident students; 52,000 people attending sixty-five meetings on the campus; personal conferences and small group meetings with 20,000 farmers; 1,200,000 people contacted by extension workers from the College of Agriculture; 20,000 individuals addressed by University speakers; 100,000 people treated by the clinic of the University of Illinois Hospital in Chicago; 500,000 students in elementary schools and high schools throughout the state witnessing motion-picture films distributed by the University.

A SELECTED group, especially interested in the processes and results of social change, will visit next summer the four countries of Europe where the most extraordinary cultural transformations of recent years have been attempted: Italy, Turkey, Soviet Russia, and Germany. In each country, visits and interviews are being arranged to bring out some aspects of the civilization which have undergone drastic change, and others which have stubbornly resisted change. An attempt will be made to discover how individual lives have been affected, for better or for worse, by what has happened in the social order.

There is opportunity for a limited number of teachers who may be interested to join this study expedition. It is neither a commercial enterprise nor a credit course. The dates are July 1 to September 1; the total cost will be about $800. Information can be obtained from Goodwin Watson, 525 West One Hundred Twentieth Street, New York City.

HEAVY trends toward the social sciences are causing considerable discussion among administrators and faculty members at Harvard and Williams. Two years ago course requirements were modified at Harvard in the supposed interests of the physical sciences. The trend since that time, however, has been in the direction of the social sciences. In his recent annual report President Conant has deplored the situation, observing, "I hope that we have reached the end of the trend away from the arts and letters."

At Williams for the first time in a dozen years more undergraduates are registered for economic majors than for majors in English. Meanwhile, history and political science reveal comparable increases, while registrations in the natural sciences are decreasing. At Yale and Princeton the situation is somewhat different. History, economics, and English hold the academic spotlight at Yale, but there seems to be no marked increase of registrations in the social sciences. At Princeton the direction is toward the natural and mathematical sciences.

· Editorial · Comments ·

Survey Courses

THE current Henry Holt publication, *What about Survey Courses?* under the editorship of B. Lamar Johnson, reveals the surprising growth of the survey-course idea in higher education. Estimates, made upon the basis of the Cowley questionnaire and Havighurst's figures, indicate that 303 survey courses are being taught in colleges and universities. The natural sciences account for one half, the social sciences for forty per cent, with six per cent in the humanities, and four per cent in what are called composite courses.

The significance of the number is indicated by reference to earlier statistics. In 1926, Fitts and Swift studied the program of three hundred colleges and located five survey courses in the natural sciences. Cowley, in a 1935 questionnaire for the JOURNAL OF HIGHER EDUCATION, discovered that, of the 124 courses taught by respondent colleges, 104 had been started since 1926. They were spread rather evenly, nine to ten each a year, through the nine-year period, except, notably, in 1934, when 37 of the 124 new courses were initiated. Obviously, the survey idea is contagious.

Armchair speculation about causes of the rapid spread of the movement is interesting. There has been a slowly but steadily growing opinion on the part of instructors that the ends of general education are not being adequately met by the specialized beginning courses in the conventional fields of knowledge: specifically, that a beginning course in physics or chemistry does not do justice to the contributions of the natural sciences to contemporary culture. It may be that this increasing volume of criticism has broken the dam.

Undoubtedly the remarkable increase in the number of entrants into the junior-college area has had its influence. Obviously, as more students enter college, more varieties of interests and abilities are represented. When a small percentage of the population entered college, they were likely to be verbal-minded, ambitious, and industrious. As the numbers increased, other types necessarily entered college—the motor-minded, the less intellectual, the less ambitious, and the less industrious. Such students seem to tint the color of the current student body and, possibly, their inability or unwillingness to carry the conventional introductory courses may have made the instructors willing to try a new approach to the problem of completing general education.

The score of courses described by Johnson and his collaborators have one striking characteristic. No two are alike. They can hardly be classified. Two authors try their hands at classification in the book. One divides the science surveys into pure science and interpretative, comprehensive and

selective, analytical and descriptive. The other characterizes the survey courses as mosaic or integrated; problem or principle; historical, philosophical, or contemporary; terminal or exploratory. This variation is to be expected because there have been no prestige patterns which completely satisfied the explorers. Each institution demands an opportunity to try its own hand in solving the problem. When it breaks with tradition, it wants to be original or nothing. Such is the way of men in a democracy, even in such a right-wing group as the colleges and the universities, in matters educational.

This variety is highly desirable. If this swiftly accelerating movement is not epidemic and soon to run its course, it needs a few general patterns of superior quality; but which these will be can only be determined by trial and use. It is better for the colleges to have tryouts by three hundred than by three. Somewhere among them a few will emerge to receive common acceptance.

Criticisms of the surveys are appearing in print. Johnson lists thirty. Textbooks are not available, instructors with sufficient breadth of scholarship cannot be secured, credit is not allowed such courses in transfer, they upset departmental routines, and some are superficial. This is to be expected because the college structure is petrified and inflexible. Instructors feel that they are doing a reasonably good job with things as they are and are not, on the whole, avid for change.

The most significant element about this movement is that it is springing spontaneously from the ranks of the scientists in the liberal-arts colleges. It is not a movement of the educationists who are merely happy spectators. The movement reveals the fact that the arts-college instructors in a substantial number of institutions are committed to the venture, and among these are at least 20 per cent of the august Association of American Universities. It is the first recent mass attack upon the reconstruction of higher education.

W. W. C.

..Reviews..

The Steady March of Mathematics

MEN OF MATHEMATICS, *by E. T. Bell.* New York: Simon and Schuster, 1937. xxi+592 pp. $5.00.

It is indeed fortunate that the preparation of a book of this kind should have enlisted the interest of one of the foremost mathematical scholars in the land. No one but a person of both wide and deep scholarship could have written a volume which is not only an intensely human document, but at the same time the story of the steady march of mathematical ideas from the time of the Greeks to the present.

The author spreads before the reader the biographies of about thirty-five men, ranging in time from Zeno to Georg Cantor, each one of whom played an important part in the creation of modern mathematics. On the human side, he shows us what kinds of personalities these men were, their attitudes toward religion, their colleagues, and their own work. He does not attempt to paint the lily—in fact, many of the mathematicians described were no lilies; but he shows us their foibles, whether they were conceit, overmodesty, drunkenness, or plain cantankerousness. The book abounds in "wise cracks"; one wonders, indeed, how Mr. Bell can keep the level of his semi-colloquial incisive comment as high as he does.

He does not hesitate to pay his respects to the metaphysicians, the dull pedagogues, the textbook writers, the politicians, and the religious fanatics. As a fair example of his irony, just one quotation must suffice: "This queer crotchet [Hamilton's doctrine of algebra as the science of pure time] has attracted many philosophers, and quite recently it has been exhumed and solemnly dissected by owlish metaphysicians seeking the philosopher's stone in the gall bladder of mathematics." One's interest is certainly sustained when at any moment one is likely to run across a shot like that.

The author is continually encouraging the reader to realize that any intelligent person who has mastered the usual high-school courses in mathematics will be able to comprehend the scientific ideas that he presents. This is probably over optimistic. He also urges the reader to omit anything that he does not comprehend, a suggestion which most general readers will cheerfully adopt. It is remarkable, however, how little the omission of the more technical portions of the description of the work of men like Abel, Kronecker, or Poincaré dulls the interest or stands in the way of understanding what the author is actually trying to accomplish.

It cannot be too strongly urged upon all teachers of mathematics, particularly those in collegiate work, that they read this book carefully and repeatedly. They will be far more intelligent and helpful teachers if they do.

The narrow escape of some of the most original minds in the history of mathematics from complete frustration through the inability of teachers to recognize genius when they saw it ought to put every teacher on his guard against allowing rules and precedents to stand in the way of education.

MATHEMATICS FOR THE MILLION, *by Lancelot Hogben.* New York: W. W. Norton and Company, 1937. x+647 pp. $3.75.

When a book on mathematics appears on the list of "best sellers" month after month, one is curious to discover the reason for so unusual a distinction. In this case the alluring title of the book,

which suggests much result for little effort, the fact that many persons who have a defeatist attitude toward mathematics would really like to know what the subject is about, and the desire of others to brush up on some topics to which they were once exposed—each contributes a share of the appeal of the book.

The author prides himself on his materialistic outlook in contrast to those persons whose inclinations are sympathetic to an "idealistic world picture." In and out of season he emphasizes his social philosophy, minimizing the values of contemplation and the urge to discover truth for the reason that it is the truth. For example, he gives Euclid and his like very short shrift, and scarcely mentions the work of Apollonius whose interest in pure ideas resulted in the development of the mathematical theory that Kepler needed for application to what the author considers the "social" problem of determining the form of the orbits of the planets. One becomes somewhat weary with the repetition of comments like the following: "This equation can be used to substitute the socialized information of the sine and cosine for the individual labour of multiplying two numbers," and again "They [the Alexandrians] socialized the achievements of Greek geometry in the new size language of trigonometry." With such an attitude toward the subject it is inevitable that the author sometimes overstates his own case in the interest of making his point. But if a man prides himself on being without ideals, he should not be grudged his delusions, which, perhaps, are the next best thing.

Notwithstanding the tendency to sell more than can be produced, the book is interesting, and contains a vast amount of material that is rarely presented in the usual books on mathematics. The diagrams and illustrations are admirable and contribute greatly to the interest and clarity of the presentation. If, however, the reader imagines that here for the first time in the history of mathematical exposition, as the author seems to imply, the path of mathematical progress has been cleared of all the underbrush and has been converted into easy steps for little feet, he is bound to be disillusioned. At the same time it is probable that many will gain considerable enjoyment and profit from a perusal of the volume.

H. E. HAWKES
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Counseling Students

STUDENT PERSONNEL WORK: AN OUTLINE OF CLINICAL PROCEDURES, *by E. G. Williamson and J. G. Darley*. New York: McGraw-Hill Book Company, 1937. xxiv+313 pp. $3.00.

Despite its title this volume is not a discussion of student-personnel work in its broad connotations. Rather it relates to the scientific approach and the technical problems of counseling with students. A most significant book, it develops the thesis that "clinical techniques and facilities are the heart of personnel work."

To develop this thesis the authors outline ten principles of personnel work and then discuss methodology in detail. The chapters which deal with the three divisions of methodology should dispel further controversy about the need for a scientific approach and the value of scientific methods. To all concerned with this area of educational activity this detailed discussion should be of inestimable value.

The principles which are advanced will be questioned by many because of their implication that all students are maladjusted or at least are pathological subjects. This inference is re-enforced by the failure to emphasize sufficiently the basic principle of effective counseling—helping the student to help himself. The corrective attitude is stressed at the expense of the promotional. Some will criticize the idea that the approach must always be voluntary on the part of the student. The description of the follow-up program, however, does much to lessen the impression of a negative concept. A further treatment of methods of developing personality and character would have

been helpful in this connection. Although the constant use of the medical analogy may antagonize certain educators, it gives ease to the explication of principles and procedures.

From the discussion of administrative organization for student-personnel work, the reader surmises that the authors have limited their study to a few large institutions. The confusion and ministerpretation of various definitions and outlines of functions in this chapter confirm this suspicion.

Although some critics may disagree with the writers relative to terminology, organization, and functional limitation, it will be granted that the book presents evidence for the individualization of education which is the most illuminating and convincing in recent years. The authors render a still greater service in that they have demonstrated beyond doubt the obligations of institutions of higher education to provide students with personnel services based upon scientifically developed methods directed by trained and skilled workers. The reviewer's chief criticism of the book is that it is incorrectly named.

D. H. GARDNER
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A Re-formed Teachers' College

A COLLEGE CURRICULUM BASED ON FUNCTIONAL NEEDS OF STUDENTS, *by Kenneth L. Heaton and G. Robert Koopman.* Chicago: University of Chicago Press, 1936. vii+157 pp. $2.00.

During the next ten years many experimental studies will be made in the field of teacher education. Many straws in the wind indicate that the teachers' college can no longer proclaim educational reform and do nothing about its own curriculum and modes of instruction. New College of Teachers College has led the way. Now, it is heartening to see one of the teachers' colleges in a state system of education strike out on a long-time experiment. This is what the Central State Teachers College of Mount Pleasant, Michigan, has done. It has done more: it has set forth its philosophy of education, its plans, and the beginnings of reorganization in a most concise manner that should be of genuine value to teachers' colleges and colleges of liberal arts as well. Aside from its being one of the pioneers in experimentation, the study is significant for several other reasons: it frankly sets out to devise a curriculum based upon students' needs; it is an unusual co-operative enterprise because it encompasses a faculty, members of the state department of education, and its student body; it utilizes the services of an outside technical advisory committee of some of the outstanding leaders in education of teachers; and it is incorporating in its plan of reorganization the latest technical advances and practical gains that have been made in the field of higher education.

This study contains the following chapters: Use of a College as a Demonstration-Research Center, Curriculum Problems of a College, The Functional Needs of Students, Characteristics of the Major Fields of Learning, Methods and Materials of Instruction, Adjustment of Administration to the Reorganized Program, Development of a Program of Evaluation Activities, and Organization of the Faculty for Continuous Curriculum Development. The Appendix contains three lists of functional needs in the areas of social relationships and personal and family relationships.

When this report was made, the experiment had been under way for two years. It is therefore too soon to look for any evidences of the superiority of this plan over any other program. The areas of general education are suggestive. One wonders whether these are being expanded by selection of materials, methods of teaching, efficiency of learning on the part of students, and methods of evaluation. Here, of course, is the rub. As anyone who has ever attempted to reorganize a college curriculum knows, the major problems are: first, the actual building up of bodies of materials that are not fragments of the old curriculum reassembled; and second, a transformation in the fac-

ulty's philosophy of education that will change the methods of instruction and, in turn, the learning activities of the students. One sees throughout this book evidences of a faculty at work, but how effective this work is cannot be gleaned from the book. The commendable feature about this experiment is that the faculty realizes the need of a program of evaluation and has set up one that looks adequate for its purposes. So many so-called "experiments" in higher education seem to neglect this important feature.

It is true that this experiment has been built upon the needs of a specific student body and the educational needs of a particular state, and for that reason the methods cannot be transferred to another college. This is as it should be. To the progressive college administrators or faculty members, this book will bring a veritable compendium of useful information and challenging suggestions. Undoubtedly this is a progress report. If subsequent studies are as suggestive and sound, new trails will have been blazed for teacher education.

J. J. Oppenheimer
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A Valuable Tool

Guide to the Use of Libraries: a Manual for College and University Students, *by Margaret Hutchins, Alice S. Johnson, and Margaret S. Williams.* 5th. ed. rev. New York: H. W. Wilson Company, 1936. xii+ 252 pp. $1.25.

The fact that this manual for college and university students here under review has reached its fifth edition is indicative of its popularity and success. Copyrighted in 1920, the book has had a steady use since that time and has proved its value to a great many students. The authors, or compilers, have been wise in not neglecting one of the very necessary factors in any list of reference tools, namely, that constant revision is essential. New editions must supersede those out of date, and entirely different books must replace those informative volumes which have become obsolete because new discoveries and new theories have changed the whole field of thought and introduced new subjects. This is especially true in the field of pure science, in political treatises, and in the biographical dictionaries which must frequently be brought up to date. The flow of books is constantly broadening the stream of knowledge, and to keep the stream unpolluted is one of the important responsibilities of the libraries who hoard the output of the press. There is an art in deleting the old as well as in selecting the new.

As the compilers of this volume state:

> The college library has . . . a very real service to perform. . . . In addition to supplying reading and study room facilities, the primary purpose is to make possible the investigation of any subject connected with the college curriculum. The library becomes the common laboratory of students and teachers alike, irrespective of their special interests, be it engineering, agriculture, commerce, science or the liberal arts.

To show how this laboratory should be equipped and used is the purpose of this volume.

The text is so arranged that the technique of running a library is introduced first, even before the student knows what he is to get for his trouble. He must almost become a librarian before he is aware of the purpose and scope of its book collection. Since the technique connected with a library is complex and special, as well as detailed, this must make the approach to the books somewhat difficult for young students. If the order here could be reversed and students could first become interested in books and be led to realize the great treasures they contain, the library technique might be more easily mastered. It then becomes a means to an end. Young people today want to know what they are going to reap by their efforts before they take the plunge; therefore, it would seem to be better psychology to have the students study books for their content value first. If a young man interested in debating, for example, can get hold

of a book which will suggest hundreds of topics for his team, he is going to be willing to learn the technique necessary in finding the book. He does not want to know, nor does he need to know, all the methods the librarian must use in order to make his books accessible. What he wants is the book. The system by which books may be found will certainly be learned more easily if they are really needed. Therefore, it would seem less complicated if such a manual would first list and discuss the books rather than begin with a strange and difficult technique peculiar to library administration.

The volume is one which will appeal to Freshmen who are in need of intellectual stimulation; its book notes are interesting and informing and by surveying the pages and studying the books themselves, new discoveries are made, a means is opened for increasing the students knowledge, and they find themselves well on their way to climbing the intellectual hill.

A feature in this last edition is the addition of a new chapter devoted primarily to reference sources which may be of use to the student in the choice of his personal reading, or the selection of books for his private library. In this chapter the student's attention is called to book reviews, and some of the most important newspapers and magazines carrying reviews are noted. This is followed by an attractive list of "Books about books and reading." The titles to which the compilers give prominence are: *The Bookman's Manual* by Bessie Graham, *Living with Books* by Helen E. Haines, and *A Reader's Guide to Books* by May Lamberton Becker. Thirteen other titles, which are equally useful, are listed without annotations. Guides to selection such as *Wilson's Standard Catalog for Public Libraries*, 1934; *Book Review Digest; United States Catalog* and its supplements show not only what to select but also where books may be purchased and their cost.

The general subjects covered include reference books, such as encyclopedias, almanacs, subject dictionaries—both general and special—as well as language dictionaries. Each group is represented by from one to twenty-five titles. Some of the most interesting are: biography, history, sociology (which might be more correctly called social sciences), literature, which includes some timely titles such as *Living Authors*, and *Authors Today and Yesterday;* fine arts, which includes the new title: *Composers of Today* (1934) and the revised edition of Kobbe's *The Complete Opera Book* (1935). In the home-economics group we find extensive revision of old titles but few new ones.

One frequently misses a good general treatise in a broad field, as a good United States history, and the index is not always helpful. There are no entries for antiquities, authors, books and reading, churches, curiosities, folklore, gardening, proverbs, and the like, although titles covering these subjects are listed in the text. Perhaps when a more thorough revision is made, the index will be reprinted to include more entries.

The volume is a valuable tool and one which should be found on the shelves of all college, school, and public libraries. Many instructors will find it to be a splendid supplementary guide to books and reading.

MARGARET MANN
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Readable and Thought-Provoking

MAKE YOURSELF A JOB: A STUDENT EMPLOYMENT HANDBOOK, *by Myron Downey Hockenbury*. Harrisburg, Pennsylvania: Dauphin Publishing Company, 1936. ix+160 pp. $1.50.

Although this little volume is primarily addressed to students whose funds are inadequate to meet their college expenses, it is a valuable book for college personnel people who are charged with student-employment responsibilities. Apparently the author, during his own student days at Princeton University and the Dickinson School of Law, struggled with financial problems and learned much about how best to use his time for financial returns.

On the basis of his experience he has made an extensive study of student-employment problems, and his findings are brought together in this readable, thought-provoking, and fairly complete study.

Fifteen chapters are included in the volume, among them the following: The Room and Board Problem, The College Woman Works Her Way, Skilled Labor and the Trades, Salesmanship, Scholarships and Loans, and Vacation Opportunities. Despite the fact that the author is somewhat handicapped because of a poor style and an insufficient range of educational experience, the book which he has produced seems to the reviewer to be one of the most complete statements of the student-employment situation which has been published. Certainly all administrative officers in colleges and universities who are interested in the financial problems of students will find it a mine of information.

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An Indispensable First Aid

FREEDOM OF SPEECH, *Compiled by Julia E. Johnsen.* New York: H. W. Wilson Company, 1936. 317 pp. $.90.

Three-fourths of this book is devoted to excerpts and reprints from recent books and periodicals, mainly American and all in English, that are classified under the headings Free Speech, Academic Freedom, Teachers' Oaths, Radio Censorship, Civil Liberty, Military Disaffection Bill. The other fourth is a similarly classified bibliography of eight hundred titles.

The book presents briefs for both sides of these controversial topics, all of which are of interest to college and university faculties and students. It is a volume of "The Reference Shelf," a series of 100 such books on timely social questions, most of them prepared by the present compiler, designed to be used as study outlines and debate material by clubs, students, discussion groups, and public speakers.

The aim throughout has been to represent both sides of each topic as fairly as possible, having regard for material that is easily available and that promises authority and careful preparation. This aim appears to have been achieved with commendable success. While it is inevitable that much, perhaps most, of the material used in the excerpts and referred to in the bibliographies will be strongly on one side or the other of these questions, certainly careful examination of the books in this series can create no impression or suspicion that the compiler or publisher is striving for any aim other than entire impartiality.

The needs of general readers and students, as well as debaters or special advocates, have been kept in mind in the presentation of text and references. This volume, and its fellows in "The Reference Shelf" series, would seem to be indispensable first aids in any study or review of current public questions. They are so regarded by thousands of librarians, and they may well be better known to teachers.

J. I. WYER
New York State Library